



**Structure and Effectiveness
of the State's Water Quality Programs:
Section 303 (d) of the Federal Clean Water Act
and Total Maximum Daily Loads (TMDLs)**

**Report to the Legislature
Pursuant to AB 982 of 1999**

February 2002

**STATE WATER RESOURCES CONTROL BOARD
CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY**

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EXECUTIVE SUMMARY

State law passed in 1999 (Chapter 495, Statutes of 1999, AB 982) requires the State Water Resources Control Board (SWRCB) to submit three annual reports to the Legislature on the structure and effectiveness of the State's water quality management programs as they relate to section 303(d) of the federal Clean Water Act (CWA). Section 303(d) requires the State to develop a list of waters that are not attaining water quality standards and to develop pollutant loads that can be allowed without adversely affecting the beneficial uses of those waters. The charge for these reports is to evaluate how well the State has performed in identifying impaired waters (those not attaining standards) and in defining the allowable levels of specific pollutants for impaired waters. The allowable level is called a Total Maximum Daily Load or TMDL. A complete TMDL includes an implementation plan that limits pollution to achieve the water quality standard.

This is the second report of the three reports required by AB 982. The first report titled, *Structure and Effectiveness of the State's Water Quality Programs: Section 303(d) of the Federal Clean Water Act and Total Maximum Daily Loads (TMDLs)* (January 2001), was submitted to the Legislature in January 2001. Appendix A is the Executive Summary from the January 2001 report. This second annual report focuses on SWRCB's section 303(d) listing and TMDL development process, identifies some critical areas in need of improvement, and presents the TMDL Initiative Action Plan (Action Plan) for conducting this challenging effort. The Action Plan will serve as a living blueprint for ensuring water quality while completing and implementing TMDLs in an effective and efficient framework. AB 982 also requires SWRCB to establish a public advisory group (PAG) to assist SWRCB with its evaluation of the State's TMDL program. The Action Plan addresses all of the consensus recommendations of the PAG.

In general, SWRCB believes that the PAG's concerns about the effectiveness of SWRCB's TMDL Program are well founded. As the PAG has noted, developing and implementing meaningful TMDLs is a great challenge, and additional resources are needed if we are to make significant gains in improving water quality throughout the State. In the past two years, State support for development and implementation of TMDLs (now at \$11.4 million) has been provided, and federal baseline support has been increased (now at \$3 million) so that a dedicated effort to establish TMDLs is now underway.

The primary focus of this report is the Action Plan. Section II of this report presents a brief summary of the Action Plan. The complete Action Plan is attached as Appendix B. Section III details the current TMDL program structure and SWRCB's reorganization effort. Appendix C details how each consensus recommendation of the PAG has been incorporated into the State's program.

I. INTRODUCTION

CWA section 303(d) requires the states to produce a list of waters that are not attaining water quality standards after technology-based limits are imposed on all point sources discharging to the subject waters [303(d) list]. The states are required to develop TMDLs for those waters included in the 303(d) list. A TMDL must account for all pollutant sources that caused the water to be listed on the 303(d) list. Federal regulations require that the TMDL, at a minimum, account for contributions from point sources and nonpoint sources, such as polluted runoff. The U.S. Environmental Protection Agency (U.S. EPA) is required to review and approve the list of impaired waters and each TMDL developed by the states. If U.S. EPA disapproves a 303(d) list or a TMDL, then U.S. EPA is required to establish the list or TMDL for the state. The text of CWA section 303(d) is attached as Appendix D.

In 1999, the Legislature enacted AB 982, which established California Water Code, section 13191. The section requires SWRCB to convene a public advisory group or groups to assist in the evaluation of the program's structure and effectiveness as it relates to the implementation of the requirements of CWA, section 303(d) and applicable federal regulations. The law also requires that SWRCB report to the Legislature annually, for three years, on the structure and effectiveness of its water quality programs related to section 303(d).

SWRCB convened the 24-member PAG in February 2000. Half of the PAG membership represents various environmental groups throughout the State, and the other half represents the public and private entities whose activities are regulated by SWRCB and the Regional Water Quality Control Boards (RWQCBs), including cities and counties, sanitation districts, oil industry, agricultural industry, timber industry, and the building industry. A complete list of AB 982 PAG members is presented as Appendix E of this report. The PAG's consensus points and recommendations were discussed in the first report of this subject matter submitted to the Legislature in January 2001. Subsequently, SWRCB developed the TMDL Initiative Action Plan to address the concerns of the PAG. The Action Plan is the primary focus of this second report to the Legislature and is discussed in the second section of this report. The Action Plan has been developed as a dynamic planning document that will be revised approximately every six months. It contains actions designed to enhance program performance.

TMDL Resources

Before 1997, TMDLs in California were developed only to the extent that funding from various programs could be used to develop the TMDLs. For example, work on the San Lorenzo River nutrient problems was conducted using basin planning funds and Nonpoint Source Program funds (federal grants under CWA section 319). In Fiscal Year (FY) 1997-98, U.S. EPA provided the first funding (\$800,000) dedicated to TMDL development in California. Baseline federal support for the TMDL in the current

fiscal year is \$3 million, which is comprised of three federal grants: CWA section 104 grant (\$750,000), section 106 grant (\$895,488) and section 319 grant (\$1,355,000).

In 1999, the Legislature and the Governor dedicated the first State resources to the development of TMDLs. Since that time additional resources have been provided. Today SWRCB and the nine RWQCBs have a baseline budget of \$8.4 million in State funds and \$3 million in federal funds dedicated to the development of TMDLs, and \$2.97 million in State funds for the implementation of TMDLs. Currently, a total of 115.5 staff persons at SWRCB and RWQCBs are working on developing and implementing TMDLs. TMDL work has become a central focus for SWRCB and RWQCBs' water quality management strategies.

Baseline funds are dependable resources that are dedicated to TMDL activities. In addition to baseline funding, other funds may also be made available to the TMDL efforts. For example, in FY 2001-02 the TMDL program received a one-time federal grant of \$1.45 million in contract resources. This funding is not included in the baseline TMDL budget because allocation of these federal grant funds is based on competing regulatory priorities (such as storm water) and is subject to U.S. EPA approval each year.

Table 1. FY 2001-02 TMDL Resource* Distribution

Regional Board	Total TMDL Development Staff	Total TMDL Implementation Staff	Total Contracts for TMDL Development	Total Contracts for TMDL Implementation
1	10.1	2.3	\$475,000	
2	8.8	1.8	\$378,800	
3	9.9	1.8	\$335,600	
4	11.7	2	\$505,200	
5	14.2	3.9	\$976,000	
6	9.0	1.8	\$599,000	
7	5.9	1.5	\$326,200	
8	8.1	1.7	\$383,400	
9	6.8	1.4	\$100,000	
SWRCB-DWQ	10.0	1.8	\$372,000	\$1,000,000**
SWRCB-OCC***		1.0		
Total	94.5	21.0	\$4,451,200	

* Consists of State General Fund and Federal grant funds.

**Statewide contract resources for development and implementation of preventative and corrective actions for nonpoint source (NPS) TMDLs consistent with the State's NPS pollution control program.

***Office of the Chief Counsel.

Contract services are also being used to assist in coordination and TMDL development. All RWQCBs are actively using contracts to augment the stakeholder public

discussions, provide technical analysis, model TMDL parameters or targets, and provide training in TMDL development. Contracts for statewide training services are under development and have been used in the past. A number of other water quality programs, such as nonpoint source and monitoring and assessment programs, also provide support for the TMDL program in one aspect or another, but do not directly fund TMDL development or implementation. SWRCB's current baseline budget for the Surface Water Ambient Monitoring Program (SWAMP) is \$6,772,000, including 15.8 PYs and \$5.1 million in contract support. Data collected by SWAMP will be used to support 303(d) listing and TMDL development.

The Department of Pesticide Regulation (DPR) received three permanent budget augmentations in FY 1999-00 and FY 2000-01, which provided a total of \$3,480,000 for assisting in the development of pesticide-related TMDLs. These resources were provided to enhance DPR's Surface Waters Program (\$2,086,000 in DPR Fund and \$894,000 in General Fund), and for work in the San Joaquin Valley (\$500,000 in General Fund). The work of the Surface Waters Program addresses six areas: (1) surface water monitoring, (2) source assessment, (3) evaluation and validation of the effectiveness of management practices in reducing pesticide runoff, (4) database management, (5) interagency coordination, and (6) outreach and education. The program has allocated \$820,000 annually for contracts to assist the RWQCBs in TMDL development.

TMDLs Completed or Developed as of December 2001

A complete TMDL includes a technical TMDL report, implementation plan, adoption by the RWQCBs, and approval by SWRCB, the Office of Administrative Law (OAL) and U.S. EPA. The following is a list of TMDLs that have been completed, are going through the approval process, or are being considered by the RWQCBs:

TMDLs Completed:

Laguna de Santa Rosa	nitrate
Newport Bay/San Diego Creek	nitrogen
Newport Bay/San Diego Creek	phosphorus
Newport Bay/San Diego Creek	sediment
Newport Bay/San Diego Creek	fecal coliform
Santa Ana River	nutrients
Salt Slough	selenium
Grasslands	selenium
Upper San Gabriel River	trash

TMDLs Adopted by the RWQCB and Pending Approval:

Garcia River	sediment (pending OAL approval)
San Lorenzo River	nitrate (returned to RWQCB for clarification)
Los Angeles River	trash (pending SWRCB approval)

Ballona Creek	trash (pending SWRCB approval)
Heavenly Valley	sediment (pending OAL approval)
Alamo River	sediment (pending SWRCB approval)
New River	pathogen (pending SWRCB approval)

TMDLs Pending RWQCB Adoption:

Indian Creek	phosphorus
Calleguas Creek	chloride
Morro Bay	sediment
Santa Monica Beaches	pathogen
Santa Clara River	chloride
Los Angeles River	mercury

TMDLs Established by U.S. EPA Under Consent Decrees*:

Gualala River	sediment
Navarro River	sediment and temperature
Ten Mile River	sediment
South Fork Eel River	sediment and temperature
Noyo River	sediment
Van Duzen River/Yager Creek	sediment
South Fork Trinity River/Hayfork Creek	sediment
Redwood Creek	sediment

*This list does not include TMDLs established by U.S. EPA and superseded by TMDLs adopted by the RWQCBs for the same water body/pollutant.

Structure of the State Program

The effectiveness of SWRCB and RWQCB efforts to solve water quality problems depends on the integration and coordination of programs and efforts both within SWRCB and RWQCBs, and agencies and people outside SWRCB and RWQCBs, in government and the private sector. The increase in staff combined with the number of TMDLs under development has created the need to define a new management structure within SWRCB. New Executive Advocate and Statewide TMDL Program Manager positions have been established and the Action Plan developed. The Action Plan describes overall goals, specific new structures, and tasks that will be put in place to ensure timely, high quality TMDLs. It is anticipated that the rate of TMDL development will continue to increase over the next several years even if resources remain at the present level. This is due to the skills and information acquired by staff and the improved management provided in the Action Plan. The details of SWRCB's current TMDL program structure and reorganization efforts and the TMDL program structure within each RWQCB are presented in Section III of this report.

II. TMDL INITIATIVE ACTION PLAN

California is faced with the challenge of producing TMDLs to resolve over 1,400 water body/pollutant impairments. To meet this challenge SWRCB and RWQCBs have developed the TMDL Initiative and Action Plan for implementing the Initiative. The overarching purpose of the Initiative is to achieve and maintain water quality throughout the State. This Initiative is being established to ensure that the TMDL effort in California results in tangible water quality improvements in the shortest possible time. The Action Plan establishes an ongoing process to ensure the highest level of performance from the available TMDL resources as well as seeks ways to augment TMDL resources. It is imperative to SWRCB and the RWQCBs that the TMDL effort is: (1) focusing on the most compelling water quality improvements; (2) contributing to solving water quality problems; (3) being conducted expeditiously and efficiently; and (4) enhancing our ability to attain and maintain water quality standards.

Management of water quality is becoming increasingly difficult. We face situations that involve relatively complex environmental assessments, and necessitate integrated responses of multiple agencies at various levels of government. In the private sector, water quality management involves issues of deep seated social behaviors or perceptions, and reliance on multiple regulatory and bureaucratic processes.

To address this level of complexity, three overarching goals are established for the TMDL effort:

1. Improve TMDL program performance in California;
2. Enhance communication among SWRCB, RWQCBs, and stakeholders; and
3. Enhance collaboration and support among SWRCB, RWQCBs, and all stakeholders, including the public, regulated community, and other regulatory and resource agencies.

These goals will be pursued through the Action Plan, which describes specific steps to be undertaken in the nine strategic elements described below. Each strategic element addresses one or more of the goals listed above:

1. TMDL Program Structure and Management
2. Information Management
3. TMDL Toolbox and Guidelines
4. Outreach, Communication, and Participation
5. Early Implementation
6. Monitoring and Assessment
7. Basin Planning

8. TMDL Implementation

9. Budget Development and Management

The Action Plan, which is presented in Appendix B of this report, contains specific tasks and milestones. It will be maintained as a living document, undergoing revisions as needed, but not less frequently than every six months. This will allow SWRCB and RWQCB managers and staff, the regulated community, and other members of the interested public to be kept abreast of the latest strategic thinking about program direction and improvements. In addition, specific annual workplans and a three-year planning schedule will be used by the RWQCBs to plan for and carry out specific TMDL work. This combination of specific regional planning and statewide strategic planning will ensure active and effective implementation of the TMDL program and maintain a focus on compelling water quality problems.

III. STRUCTURE OF THE STATE'S TMDL PROGRAM

Figure 1 presents a graphic depiction of the TMDL program for California. SWRCB (backed by U.S. EPA) is responsible for developing TMDLs, pursuant to the CWA section 303(d). The formal process requires that each of the nine RWQCBs adopt TMDLs as amendments to its Water Quality Control Plan (Basin Plan) using a public hearing process that is governed by the Porter Cologne Water Quality Control Act, California Environmental Quality Act, and the Administrative Procedures Act. The program structure for TMDLs relies, in part, on the programs that are in place to carry out these tasks. In addition, TMDLs are being developed with collaboration among RWQCBs, State and federal agencies, and affected parties, including public interest groups. Therefore, some structural program components are designed to support these collaborations.

A large number of local and statewide interest groups and agencies are involved in TMDL development. The work of these groups is factored into TMDL development primarily at the RWQCB level. The principal statewide advisory group is the AB 982 PAG established pursuant to Water Code, section 13191. A statewide TMDL Roundtable comprised of RWQCB, SWRCB, and U.S. EPA staffs has been established to facilitate coordination and consistency across programs and regions. SWRCB Executive Director coordinates with the RWQCBs through the Management Coordinating Committee (MCC) consisting of RWQCB Executive Officers and SWRCB executive managers. A companion committee of RWQCB Assistant Executive Officers (AEOs) also serves to coordinate among program functions. As appropriate, other SWRCB programs provide technical and administrative support for the TMDL effort.

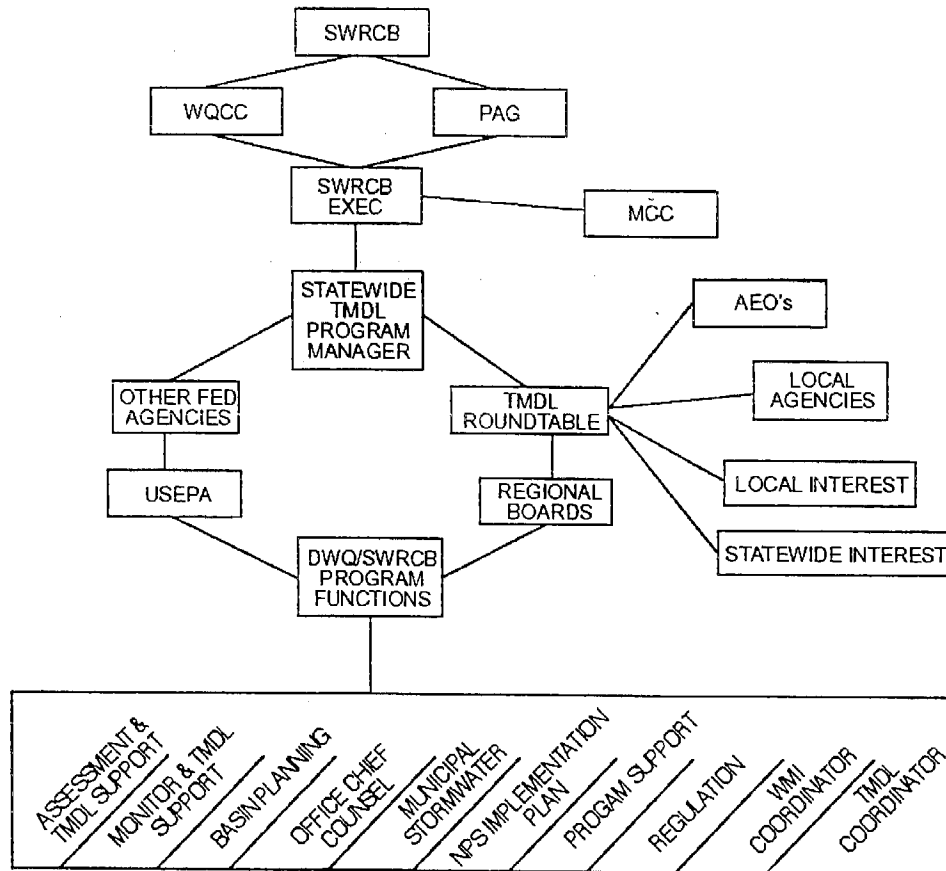
SWRCB TMDL Program Reorganization

Several organizational changes to improve TMDL development are being put in place in FY 2001-02. A Statewide TMDL Program Manager has been created to provide overall policy direction for the TMDL effort. An SWRCB Deputy Director has been given a special assignment as the Executive Advocate to expedite delivery of necessary resources and organizational-level guidance to accelerate TMDL development. SWRCB's Division of Water Quality (DWQ) has been reorganized to allow more direct application of staff resources to the development of TMDLs. Figure 2 illustrates the new organizational structure. A second phase of the reorganization is also proposed, which will allow for a more focused watershed approach to managing program activities by creating a watershed branch. The implementation of the second phase will require approvals of the Department of Personnel Administration.

The first phase of the DWQ reorganization created a TMDL Section. The TMDL Section has three units with responsibilities that span all TMDL process areas. The Monitoring and TMDL Listing Unit has responsibility for the 303(d) listing policy, 303(d) list development, and public outreach. Additional activities include statewide ambient water quality monitoring.

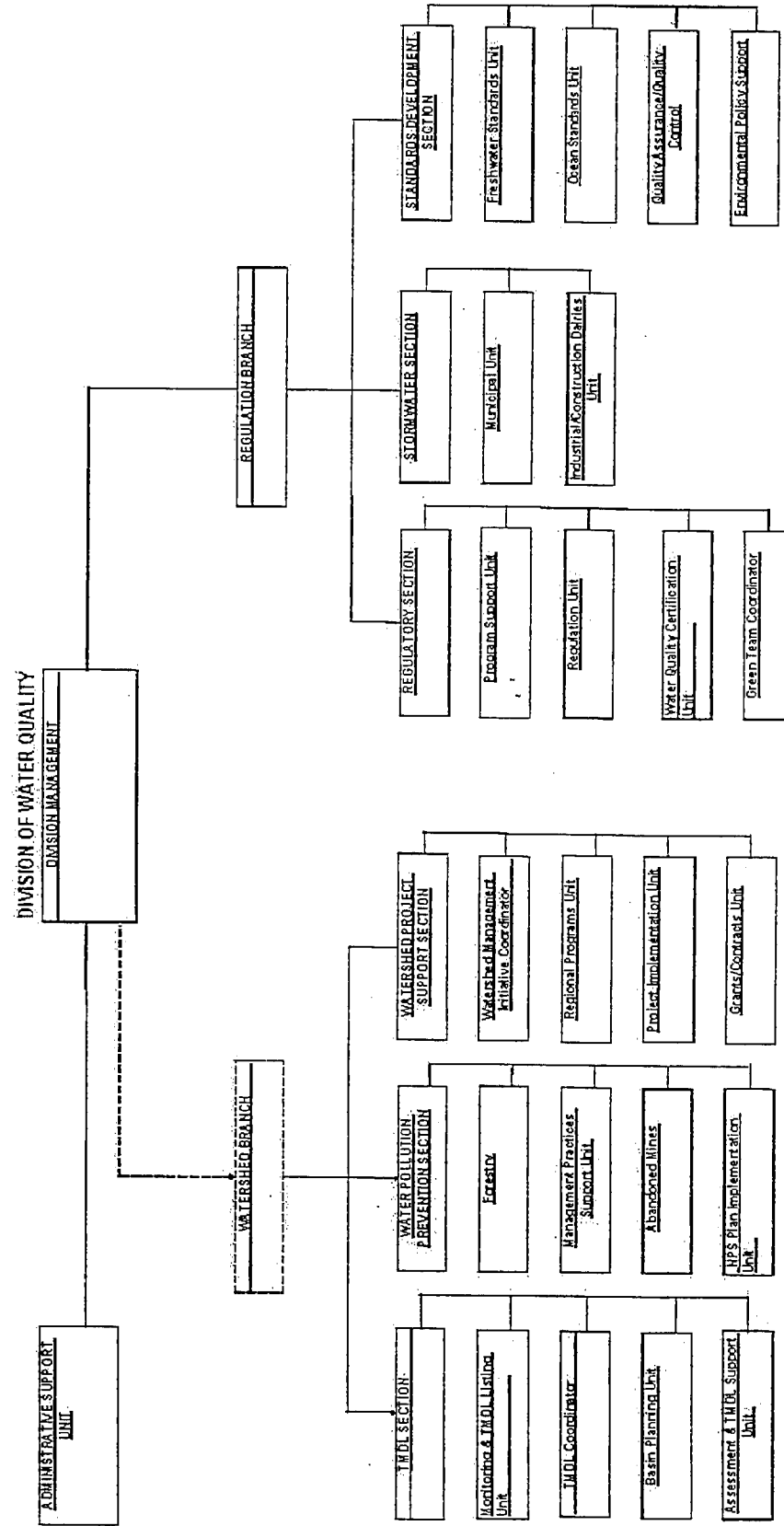
Figure 1.

Organization and Coordination of State TMDL Program



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FIGURE 2. DIVISION OF WATER QUALITY REORGANIZATION



The TMDL Support and Water Quality Assessment Unit manages contracts that support TMDL development as well as provides process tracking and status reporting. Water quality assessment and CWA, section 305(b) reporting are also accomplished by this unit. The Basin Planning Unit provides support for the TMDL effort by ensuring that enforceable features required by statute are incorporated into the appropriate RWQCB Basin Plan. An additional component of the TMDL Section is the TMDL Coordinator. The TMDL Coordinator has responsibility for developing statewide guidance for the development of TMDLs. This guidance will be produced with input from the TMDL Roundtable. Workplans that quantify all SWRCB and RWQCB TMDL activities are also developed by the TMDL Coordinator.

The TMDL Section will require significant support from other units and sections in DWQ. As demonstrated in Figure 2, DWQ has the technical capability in other programmatic areas that can assist in the TMDL effort. Accordingly, all DWQ resources will be mobilized as required on a first priority basis to support TMDL delivery.

Table 2 contains a brief description of each program element depicted in Figure 1.

Table 2. Descriptions of TMDL Program Elements.

AEOs	Assistant Executive Officers. The AEOs meet as a committee once each month to coordinate program functions and budgets.
DWQ	Division of Water Quality. The Division is responsible for program budget management and overall workplan development and coordination. The Division supports TMDLs through a number of program functions.
DWQ/SWRCB Program Functions	DWQ maintains program lead functions for many water quality programs of SWRCB. The various program areas that are most directly contributing to TMDL work are noted in Figure 1.
MCC	Management Coordinating Committee. This group is made up of SWRCB Executive Director, the Deputy Directors and the Executive Officers of the RWQCBs. This group meets monthly to coordinate regulatory workload and responses to pressing issues.
PAG	Public Advisory Group. This is the advisory group established by SWRCB pursuant to the Water Code, section 13191. The group is comprised of 12 representatives of various environmental groups and 12 representatives from the regulated community. It is charged with the responsibility to advise and evaluate SWRCB's TMDL program.

PAG (continued)	The PAG reviews progress, program structure, and effectiveness as it relates to the implementation of the requirements of CWA section 303(d), TMDLs, applicable federal regulations, and monitoring and assessment programs. The group meets at least quarterly.
Statewide TMDL Program Manager	This is a new position created in FY 2001-02 to provide overall policy direction to the TMDL program.
SWRCB	State Water Resources Control Board. For purposes of this organizational chart SWRCB refers to the five-member board (currently with two vacancies) instead of the agency as a whole.
SWRCB Executive Management	This includes the Executive Director and the Deputy Directors of SWRCB.
TMDL Coordinator	The TMDL Coordinator works in DWQ and is responsible for coordinating the TMDL Roundtable, developing annual workplans, and coordinating the development of guidance for developing TMDLs.
TMDL Roundtable	The TMDL Roundtable is made up of RWQCB TMDL staff, DWQ staff and U.S. EPA staff. The Roundtable serves as the umbrella forum for staff from all RWQCBs to address common TMDL issues. Workgroups of the Roundtable address specific TMDL issues, such as development of pesticide TMDLs or approaches to sediment TMDLs. The workgroups will become more formal, categorical work groups under the new TMDL Action Plan. The TMDL Roundtable meets quarterly.
U.S. EPA	U.S. Environmental Protection Agency. U.S. EPA is involved through its grant programs and regulatory oversight duties. The U.S. EPA TMDL Coordinator works closely with the Statewide TMDL Program Manager, DWQ TMDL Coordinator, and DWQ TMDL Section and Unit Chiefs to ensure that the TMDL program satisfies federal requirements. U.S. EPA also maintains liaisons with all RWQCBs to ensure U.S. EPA has adequate understanding of the details of all TMDLs.

WMI Coordinator	The Watershed Management Initiative Coordinator facilitates the revision of the planning document known as the Integrated Plan for Implementation of the Watershed Management Initiative (WMI Plan). The WMI Plan priorities are focused on the five-year horizon and are revised annually. The WMI seeks to provide planning integration of major program functions.
WQCC	Water Quality Coordinating Committee. This committee is comprised of board members from the RWQCBs and SWRCB, the Executive Director of SWRCB and the Executive Officers of the RWQCBs. It meets periodically to review and discuss current developments in water quality regulation.

RWQCB TMDL Program Structure

Some RWQCBs have TMDL units, while others assign work across programs. In all cases, staff resources are pooled from a variety of programs reflecting the broad expertise required for developing a TMDL, including Basin Planning, Monitoring and Assessment, Geographic Information System (GIS), and Data Management, as well as technical expertise (pathogens, metals, toxicity, etc.). For that reason, the number of staff in TMDL units within certain RWQCBs may not be consistent with the number of TMDL PYs within the same RWQCB presented in Table 1, (Page 3).

Region 1: The North Coast RWQCB reorganized in November 2000 to establish a TMDL Development Unit. This unit is organized by watershed and has seven TMDL staff including the unit chief. Staff members are assigned to TMDLs in the Gualala, Mattole, and Klamath watersheds. One staff person is dedicated to GIS support and data management. The unit supports other units whose work links closely to TMDL development, including Monitoring and Assessment and Basin Planning. Staff resources assigned to TMDL development have increased by about 40 percent in the last year.

Region 2: The San Francisco Bay RWQCB has a TMDL Section within its Watershed Division, with eight dedicated staff. Staff and program resources are organized by TMDL projects within a particular watershed and/or are grouped by pollutant categories to maximize certain water quality expertise (e. g., mercury, sediment). Staff from the Planning and Policy and Watershed Divisions participate as needed. Staff resources have increased approximately 50 percent in the last year.

Region 3: The Central Coast RWQCB has a Watershed Assessment Unit within its Watershed Branch with eight staff members and a unit supervisor dedicated to TMDL

work. Staff and program resources are organized by TMDL projects within a particular watershed and/or grouped by pollutant categories to maximize certain water quality expertise. One of the eight staff provides GIS support and data management. TMDL efforts are closely coordinated with staff in other units implementing pollution control activities, monitoring and assessment, and basin planning. The program has increased in staff resources by 60 percent in the last year.

Region 4: The Los Angeles RWQCB has two TMDL units, which are organized on a watershed basis. The Region's first TMDL was approved by U.S. EPA in December 2000. The units are currently working on developing eight TMDLs, addressing trash, chloride, pathogens, and nutrients. In addition, the TMDL Units work closely with the Storm Water and Nonpoint Source Units in TMDL implementation issues. To address the current workload, the RWQCB has increased its TMDL staffing by approximately 50 percent during the past year.

Region 5: The Central Valley RWQCB has three TMDL units within two watershed sections – one in the San Joaquin River Watershed Section and two in the Sacramento River Watershed Section. TMDL efforts utilize staff resources from other units in the watershed sections involving nonpoint source issues, the Sacramento River Watershed Program, monitoring, and agricultural and regulatory issues. Approximately 20 staff members are involved in TMDL development. The program staffing has nearly doubled in the last year.

Region 6: The Lahontan RWQCB (South Lake Tahoe and Victorville offices) reorganized in October 2000 to add a new TMDL Development Unit, based in South Lake Tahoe. This TMDL Unit has six full-time staff, including the unit chief. TMDL efforts involve staff resources of all watershed units and WMI, Regional Monitoring, and Basin Planning programs. Staff dedicated full-time to TMDLs increased by approximately 60 percent in the past year.

Region 7: The Colorado River Basin RWQCB has two units working on TMDLs: a TMDL Development Unit and a TMDL/NPS Implementation Unit. The units contain 12 staff, including six staff members dedicated to TMDL development. Additional TMDL efforts involve staff from basin planning. Staff resources have increased by approximately 50 percent in the last year.

Region 8: The Santa Ana RWQCB has a TMDL Program Manager and staff from two different units (the Inland Watersheds and Coastal Watershed Units) dedicated to TMDLs. At present, 13 staff persons work on developing TMDLs. TMDLs for nutrients, sediment and pathogens for the Newport Bay watershed were approved by the U.S. EPA in 1998. Additional TMDLs are scheduled to be developed in next three years. Staff resources have increased by approximately 60 percent in the past year.

Region 9: The San Diego RWQCB has two units that work on TMDLs, basin planning, 303(d) listings, and Tri-Annual Reviews. One unit is the Water Quality Standards Unit and the other is the Pollutant Load Reduction Program, which was established this year.

This region has ten TMDL staff positions, four of which were added this year, and a chief that oversees both the Water Quality Standards Unit and the Pollutant Load Reduction Program. These units are currently working on eight TMDLs; two of them will be reviewed by the RWQCB in April 2002.

TMDLs require extensive engagement of parties that may be affected by any limitation or requirement contained in a TMDL. The RWQCBs are working extensively with these interested parties. A list of significant regional partnerships and organizations involved in TMDL and watershed management discussions is provided in Appendix F.

Appendix A

**EXECUTIVE SUMMARY OF REPORT TO LEGISLATURE PURSUANT
TO AB 982 OF 1999 (JANUARY 2001)**

STATE WATER RESOURCES CONTROL BOARD

*Structure and Effectiveness
of the State's Water Quality Programs:
Section 303(d) of the Federal Clean Water Act and
Total Maximum Daily Loads (TMDLs)*

**Report to the Legislature
Pursuant to AB 982 of 1999**

JANUARY 2001

EXECUTIVE SUMMARY

Assembly Bill (AB) 982 (Chapter 495, Statutes of 1999) requires the State Water Resources Control Board (SWRCB) to convene an advisory group or groups to assist in the evaluation of the structure and effectiveness of SWRCB's programs implementing Section 303(d) of the federal Clean Water Act (CWA). The law requires the SWRCB to report to the Legislature regarding the structure and effectiveness of these programs and to consider any recommendations of the advisory group or groups on or before November 30, 2000 and annually thereafter until November 30, 2002. AB 982 also requires the SWRCB to assess its current surface water quality monitoring programs and to propose a comprehensive surface water quality monitoring program for the State.

In February 2000, the SWRCB convened a 24-member AB 982 Public Advisory Group (PAG). Twelve of the PAG members represent the environmental community and the other 12 represent the regulated community. The PAG met frequently throughout the year to assist the SWRCB in the evaluation of related programs. The group presented its recommendations regarding the monitoring program to the SWRCB on October 4, 2000. Subsequently, the SWRCB prepared its report to the Legislature presenting a proposal for a comprehensive Surface Water Quality Ambient Monitoring Program (SWAMP) which is currently under review.

A significant amount of PAG's efforts focused on the evaluation of the structure and effectiveness of SWRCB's programs implementing federal CWA Section 303(d). Section 303(d) requires the State to develop a list of waters that are not attaining water quality standards and to develop discharge limitations on the amount of a pollutant that can be allowed without adversely affecting the beneficial uses of those waters. These limitations are referred to as Total Maximum Daily Loads (TMDLs). PAG members reviewed the SWRCB's current 303(d) listing and TMDL development processes and explored potential ways to enhance those programs. Members representing differing perspectives on the many complex issues worked diligently towards achieving consensus. While there are some issues that will require more time to resolve, the PAG reached consensus on many essential points. On November 16, 2000, PAG presented to the SWRCB those consensus points and its recommendations on how to improve 303(d) listing and TMDL processes. Those consensus points and recommendations are summarized on Page 2 and addressed in detail in Chapter IV of this report.

The SWRCB recognizes that its current 303(d) listing process can be improved. There has been a lack of consistency among Regional Water Quality Control Boards (RWQCBs) in developing the lists. Due to limited resources during the past 15-20 years, there has also been a lack of comprehensive monitoring efforts to obtain sufficient water quality data to determine actual impairment. Progress on TMDLs has been limited. Many factors have hindered the progress of TMDL development. One of those factors is the lack of resources. In fact, no funding was specifically dedicated to TMDL development until very recently. Federal funds dedicated to TMDL development first became available in Fiscal Year (FY) 1997-98 in the amount of \$800,000. That amount has since increased to the current federal contribution of \$3 million. California began to fund SWRCB/RWQCBs' TMDL efforts in FY 1999-00 in the amount of

\$3.9 million. State funding for the current fiscal year (FY 2000-01) is \$8.4 million. The increased resources have recently enabled the SWRCB and RWQCBs to begin to “ramp up” their effort to establish TMDLs.

Additional resources will be needed to support the implementation of the proposed SWAMP. This surface water quality monitoring program will provide comprehensive water quality data that will allow the SWRCB and RWQCBs to make more accurate determinations of impaired waters in future 303(d) listing processes. Moreover, as noted by the PAG, developing and implementing meaningful TMDLs is a significant challenge, and additional resources are necessary if substantial gains in improving water quality throughout the State are to be realized.

The development and implementation of TMDLs is a complex process. TMDLs require that all sources of pollution be evaluated and that allocations of allowable releases of pollutants be assigned to specific sources or categories of sources. TMDL development therefore requires a comprehensive look at the spatial and temporal nature of pollutants. Furthermore, to make TMDLs meaningful so that actual water quality improvements can be achieved, it is imperative that workable responses to the pollutant evaluations be developed. Implementing corrective actions requires an equally comprehensive look at implementation capabilities and a balancing of responsibility and capability. Another critical element is the involvement of interested parties and the public in an open process.

These elements of the TMDL development process cut across many established programs. Implementing the strategies and limits contained in TMDLs will require the coordination with many water quality programs, both inside and outside of the SWRCB. This need to weave together existing programs is what sets TMDLs apart from all other water quality programs.

This report is the first of three annual reports to the Legislature required by AB 982 on the structure and effectiveness of SWRCB’s 303(d) listing and TMDL programs. The report describes the current process of implementing these programs, identifies some critical areas in need of improvement, and proposes ideas for future discussions with the PAG on how we should measure our progress in this challenging effort. The discussion of PAG’s consensus points and recommendations are based on PAG’s draft report (Draft V) received by the SWRCB on December 22, 2000.

Need for Additional Resources

PAG agrees that there are inadequate resources for the State to fulfill its TMDL obligations, and recommends that the State dramatically increase its funding to support the Section 303(d) listing, TMDL development, and TMDL implementation activities at the SWRCB and RWQCBs.

Although the State and federal funding for TMDL efforts has been increased in the past two years, the SWRCB agrees with the PAG that additional resources will be necessary to fully implement Section 303(d) requirements. The SWRCB has projected a long-term staffing need of 200 Personnel Years (PYs) and \$10 million to \$15 million in contract funds annually to sustain the TMDL development and implementation effort. This level assumes an ongoing need to

support adaptive management, new listings, and TMDL revisions. However, these additional resources should be allocated at a manageable pace to allow the SWRCB/RWQCBs time to recruit and train staff.

Management of Public Participation, the Stakeholder Process, and Cross Media/Jurisdiction Issues

PAG members support involvement of stakeholders and the public in TMDL development and implementation planning processes, but the representatives from the regulated and the environmental communities disagree on the level or degree of stakeholder involvement. The PAG also suggests that the SWRCB/RWQCBs seek collaboration with other government agencies to ensure that cross-media sources of pollution are addressed in TMDL implementation.

It is critical that the SWRCB and RWQCBs ensure that all interested parties are involved in the TMDL process. Therefore, the SWRCB agrees that the process needs to involve the stakeholders and the public to the greatest extent feasible. While decisions must be pushed forward in our effort to develop timely TMDLs, in many instances taking the time to resolve issues early in the development process can accelerate the final TMDL and its implementation. The SWRCB will consider options for providing financial support to ensure adequate stakeholder participation and will continue to work with the PAG to develop appropriate approaches. In addition, the SWRCB fully agrees with the PAG that education and outreach is a crucial aspect of successful TMDL development and implementation. For instance, the SWRCB and RWQCBs will expand the use of the Internet as a communication tool to provide timely information on 303(d) listed impaired water bodies, TMDL schedules and pending actions, and Geographic Information System (GIS) shapefiles of listed water bodies. The SWRCB will work with the PAG to improve public accessibility to information developed by SWRCB and RWQCBs.

Cross media pollutant control is a complicated issue and the SWRCB and RWQCBs are making efforts to address it. The SWRCB/RWQCBs are working with the Air Management Districts and the Air Resources Board on problems resulting from aerial deposition of pollutants that cause pollution in storm water runoff and exceedance of water quality objectives. Also, under the leadership of the California Environmental Protection Agency (Cal/EPA), discussions are underway with the Department of Pesticide Regulation (DPR), Department of Forestry and Fire Protection, and other federal, State, and local agencies on cross-jurisdiction efforts to address environmental problems. Furthermore, pursuant to the Plan for California's Nonpoint Source Pollutant Control Program (NPS Plan) the SWRCB/RWQCBs are working with over 20 other State agencies to address nonpoint source problems.

Listing of Waters as Impaired

The PAG recommends that the SWRCB formally adopt a Policy to guide RWQCBs' 303(d) listing process.

The SWRCB agrees with the PAG that statewide listing guidance is necessary to ensure consistency among all RWQCBs in their efforts to list the impaired waters. SWRCB staff will

develop a Policy that will direct the listing process for listings after 2002. SWRCB adoption of a formal 303(d) listing policy will require a rulemaking process and will require substantial time and public participation to complete.

TMDL Development

The PAG suggests that:

- TMDLs should be established and implemented in accordance with the CWA and where applicable, the Porter-Cologne Water Quality Control Act (Porter-Cologne Act) and other relevant State and federal laws.
- Science should play a role in TMDL development. (However, the regulated and environmental communities disagree in details regarding the level of scientific information that is necessary for TMDL development.)
- SWRCB/RWQCBs should explore ways to assist in completing TMDLs more quickly, including training, the establishment of "strike forces" at SWRCB, utilizing staff from other agencies, beginning some difficult TMDLs early, and grouping related pollutants to expedite TMDL technical work.
- Wasteload or load allocations should be established for sources of legacy pollutants and the SWRCB and RWQCBs should aggressively use existing legal authorities to identify the responsible parties for the legacy pollutants.

The SWRCB/RWQCBs are developing, in most cases, TMDLs with programs of implementation clearly articulated and establishing them as formal Regional Water Quality Control Plan (Basin Plan) amendments in accordance with both the CWA and the Porter-Cologne Act. This formal process requires a substantial investment of time and resources but substantially enhances successful implementation of the TMDLs.

The SWRCB recognizes that scientific and technical information is the foundation of TMDLs. The level of information required for an adequate understanding of each specific pollutant being addressed in a TMDL varies, depending on the complexity of watershed activities and pollutant dynamics. The SWRCB will continue to work with the PAG to address the appropriate level of scientific information necessary for developing TMDLs.

Current actions taken by the SWRCB to assist in the development of TMDLs include forming a TMDL Team to support and provide assistance to the RWQCBs and sponsoring various types of TMDL training, including modeling, statistical analysis, and U.S. Environmental Protection Agency (USEPA) workshops. Representatives of SWRCB/RWQCBs and cooperating agencies have formed workgroups to share information on TMDL development and to work together to develop TMDLs for pollutants that are statewide concerns. Contract funds are being used to fill many of the information gathering needs required for TMDL development.

Legacy pollutants pose unique problems in TMDL development because they often are not associated with a currently identifiable party or parties, and the search for responsible

parties can be a lengthy and resource intensive undertaking. In cases where a clear connection can be made to an entity or entities responsible for the pollutants, the RWQCBs will take all actions within their authority to hold such entities accountable.

TMDL Implementation Plans and Implementation

PAG agrees that the Implementation Plan:

- Is an essential part of the TMDL process.
- Should requires stakeholder involvement in the implementation of the Plan.
- May include interim milestones for load reductions.
- Should identify specific controls and/or management actions for all sources of pollutants consistent with the CWA and Porter-Cologne Act.
- Should consider use of Supplemental Environmental Projects (SEPs).

The SWRCB agrees with the PAG that implementing corrective actions is the key activity that will make TMDLs successful and that stakeholder involvement in the process is critical to sustained success. Further, the SWRCB recognizes that interim milestones may be necessary in some TMDLs that rely on the adaptive management approach to refine the TMDL over time in order to address specific controls on all identifiable pollutant sources.

SEPs are projects that receive support from fines imposed as part of the RWQCB's enforcement actions. The use of SEPs is actively being discussed at the SWRCB and RWQCBs to address a number of water quality issues. The SWRCB is currently considering amendments to the Water Quality Enforcement Policy that will provide consistency among RWQCB enforcement actions, including acceptable uses and conditions for using fine money to support SEPs and TMDL efforts. SWRCB staff will continue to discuss with the PAG possible ways to use SEPs to assist in TMDL development and implementation.

In the coming year, we will need to continue to develop TMDLs expeditiously. We also need to revise the 303(d) list in 2002 and in subsequent years. There are many areas in the current process where we can target our improvement efforts. The most pressing areas needing improvement are in communication and engagement of stakeholders and the public. Secondly, we need to ensure that new staff are recruited, trained, and provided with the appropriate skills to develop TMDLs. Technical issues of water quality assessment and analytical approaches to developing allocations and total loads will continue to be important areas for attention, particularly the application of modeling techniques for assessment, allocations, and implementation planning.

The SWRCB will continue to work with the PAG on these issues and to identify ways to enhance the 303(d) listing and TMDL processes. Discussions on those issues will be included in the succeeding two annual reports on the structure and effectiveness of SWRCB's programs implementing CWA Section 303(d). Topics for future discussions with the PAG will also include offset programs, use of SEPs to fund TMDL development, legacy pollutants, ways to advance timely development of TMDLs, and other issues that may arise in the next two years when more TMDLs are developed and implemented.

APPENDIX B

TMDL INITIATIVE ACTION PLAN

TOTAL MAXIMUM DAILY LOADS (TMDL) INITIATIVE ACTION PLAN

Edition 1.0

Revised December 2001

**STATE WATER RESOURCES
CONTROL BOARD**
California Environmental Protection Agency

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TMDL INITIATIVE ACTION PLAN

Edition 1.0 (Revised December 2001)

I. PURPOSE/GOALS

The Total Maximum Daily Load (TMDL) Initiative has been established to ensure that the TMDL effort in California results in tangible water quality improvements in the shortest possible time with the ultimate objective of restoring and maintaining the water quality standards of these waters. The purpose of the TMDL Initiative Action Plan is to identify strategies and specific actions to be taken to meet the three goals of the TMDL Initiative: (1) improve TMDL program performance; (2) enhance communication among the State Water Resources Control Board (State Board), Regional Water Quality Control Boards (Regional Boards), and stakeholders; and (3) enhance collaboration and support among all stakeholders, including the State and Regional Boards, other regulatory and resource agencies, the regulated community, and the public. Because the strategies and actions needed to support these goals are expected to change to some degree over time, this Action Plan is a dynamic planning document that will be revised in subsequent editions. Edition 1.0 focuses on strategies and actions identified to promote statewide TMDL efforts in the near-term. We will review, update, and revise the strategies and actions semiannually to reflect progress, new information, and unforeseen circumstances. Most importantly, we will evaluate the strategies and actions relative to effective and timely attainment of the goals of the TMDL Initiative and the ultimate objective to attain water quality standards.

II. TMDL DEFINED

A TMDL has essentially two meanings (*Guidance for Water-Quality-based Decisions: The TMDL Process*, US EPA, 1991, EPA440-4-91-001):

- The TMDL process is used for implementing state water quality standards – that is, it is a planning process that will lead to the goal of meeting the water quality standards; and
- The TMDL is a numerical quantity determining the present and near future maximum load of pollutants from point and nonpoint sources as well as from background sources, to receiving water bodies that will not violate the state water quality standards with an adequate margin of safety. The permissible load is then allocated among point and nonpoint sources.

The former is essentially the means by which the latter is accomplished. As used in this Action Plan, the term TMDL means the TMDL process to design and implement programs, policies, and actions that result in correcting water quality impairments and sustaining water quality improvements. A complete TMDL includes documentation that satisfies the Clean Water Act Section 303(d) requirements and State law pertaining to water quality management, amendments to Basin Plans, California Environmental Quality Act (CEQA), and administrative requirements. As such, a TMDL includes measurable features that describe attainment of the applicable water quality standard including the maximum allowable pollutant load, and an allocation of the responsibility to take corrective and preventive actions, including an implementation plan.

The timelines and documentation associated with a complete TMDL, as used in this Action Plan, are more extensive than those associated with merely calculating the maximum pollutant load. More importantly, the complexity of designing and implementing integrated efforts to achieve water quality improvements is far greater than calculating loads. Therefore, the workload and time requirements associated with this Action Plan envision time frames that often extend several years into the future.

This Action Plan also envisions involvement of stakeholders in the TMDL process, and therefore contains many features designed to communicate with and engage stakeholders in the process. These more expansive characteristics of a TMDL are implicit in the definition of a TMDL as used in this Action Plan. A TMDL may also address more than one pollutant/water body combination listed on the 303(d) list of impaired waters. Currently 1472 pollutant/water body combinations are listed and it is estimated that 400 to 800 TMDL projects will be needed to address all of these listings.

III. CURRENT PROGRAM DESCRIPTION

Currently, 94.5 Personnel Years (PYs) are dedicated to TMDL development; 28.5 PYs are supported through federal grants and the balance is funded through the State General Fund. Total direct support for TMDL work amounts to \$11.4 million per year, of which \$8.4 million is for staff and \$3 million is for contract support. An additional 21 PYs are dedicated to implementation of TMDLs addressing nonpoint source problems. In FY 2001-02 the TMDL program also received a one-time federal grant of \$1.45 million in contract resources. Executive management oversight and program direction is provided by statewide coordination through the Management Coordinating Committee (MCC), comprised of State Board Executive management and Regional Board Executive Officers. Direct program management is provided by the Statewide TMDL Program Manager along with the TMDL Roundtable comprised of managers directly responsible for TMDL efforts at the State and Regional Boards.

TMDL work is planned and scheduled on an annual, three-year, and five-year basis. In addition, at each revision of the impaired waters list a long-term schedule and priorities for TMDL development are established. The one-, three-, and five-year schedules are consistent with the long-term priorities but we may modify the schedule to take advantage of opportunities that arise. Work is being conducted in all regions and at the State Board. In some cases, court supervised consent decrees have established schedules for development of technical work leading to the federally required total load calculation. In the North Coast Region (Region 1), this schedule precludes the ability to develop Basin Plan amendments and a complete TMDL as described above, given the current level of support. In the Los Angeles Region (Region 4), the consent decree schedule has allowed for developing TMDLs as Basin Plan amendments to date, but the pace accelerates in coming years and under the current staffing level most, if not all, future work may be truncated to load calculations and allocations without implementation plans and Basin Plan amendments. In the Santa Ana Region (Region 8), all consent decree schedule dates have been met. In these consent decree cases, the U.S. Environmental Protection Agency (USEPA) is required to establish the technical load calculations as TMDLs that meet federal requirements. These USEPA-established TMDLs do not include the management and implementation features included in State-adopted TMDLs.

IV. CURRENT TMDL PROGRAM COMMITMENT

Commitments to complete TMDL work are established annually in the TMDL workplan which reflects allocated resources. The three-year, five-year, and long-term schedules are planning tools and are contingent on availability of resources. Currently the State Board estimates that adhering to the long-term schedule would require more than doubling the current level of support. The workplan for FY 2001-02 identifies work to be undertaken to continue development of 144 TMDLs (this number includes the technical support documents used by USEPA for establishing TMDLs). Thirty-two of these are scheduled for Regional Board consideration by December 2002 (see Attachment 1). This Action Plan describes activities above and beyond these existing commitments. To carry out these new activities

staff will need to be redirected from existing work. In some cases this may lead to temporarily slowing the pace of TMDL development in the regions and may require adjusting this year's workplan commitments. However, it is believed that all the activities described in this Action Plan will quickly result in enhancements to the overall effort and expedite the pace of TMDLs in the near future.

V. TMDL INITIATIVE TEAM

This TMDL Initiative Action Plan was developed by a team led by the Statewide TMDL Program Manager, Tom Mumley (San Francisco Bay Regional Board). The team also included: Tom Howard (State Board Deputy for Water Quality and Policy Development), Stefan Lorenzato (TMDL Coordinator, State Board Division of Water Quality), Gail Linck (State Board Office of Statewide Initiatives), and Greg Gearheart (State Board Office of Statewide Initiatives).

VI. STRATEGIES

In this edition of the Action Plan, we present nine strategies for meeting the goals of the TMDL Initiative and the Strategic Plan. These strategies are interrelated and dynamic, and may be integrated, deleted, or augmented in subsequent editions of the Action Plan. Brief descriptions of the nine strategies are presented below. The actions, tasks, products, and due dates for each strategy are presented in Section VII.

A. TMDL Program Structure and Management

We will assess the current program structure related to TMDL efforts, identify and establish improvements, and establish organizational modifications to address them. We will identify the interrelationship of TMDL efforts with other water quality programs and establish mechanisms to ensure effective program collaboration and integration. The role of management advocates with responsibility for TMDL efforts and integration of TMDL efforts with other water quality programs will be defined, and individuals will be assigned to these new roles. We will establish communication procedures and expectations within the TMDL program and related programs.

B. Information Management

We will establish a user-friendly information management system as part of the existing System for Water Information Management (SWIM) and enhancements to SWIM. This system will include data on all TMDL projects, with more detail for TMDL projects within a 3-year planning horizon, and even more detail associated with tasks in the active fiscal year. The latter will be part of an effort to produce electronic workplans (e-workplans). The information and data in the system will also be used to produce fact sheets, workplans, and other reports for specific TMDL projects. Intranet and Internet web sites will be established for access to the information and relevant products. Contract mechanisms such as master contracts and tracking mechanisms will also be built into the system.

C. TMDL Toolbox and Guidelines

We will produce tools and guidelines for listing and delisting impaired water bodies, developing TMDLs, and implementing the TMDL program. These products will include technical tools, methods and procedures for their use, and regulatory and policy tools, guidelines, and procedures for their use.

Tools and guidelines will be produced for 303(d) listings, categorical TMDLs (pathogens, pesticides, metals, etc.), and TMDL process elements (numeric targets, source analysis, linkage analysis, allocations, implementation plan, etc.).

D. Outreach, Communication, and Participation

We will develop tools, mechanisms, and procedures to enhance external (other agencies, stakeholders, and public) outreach, communication, and participation. Successful development of TMDLs will require participation and support of various stakeholders. Inherent to this participation and support is the need to ensure that stakeholders are informed of and understand the issues associated with developing the TMDLs. These efforts will include creating and identifying opportunities to enhance collaboration and cooperation with other agencies and stakeholders, more effectively describing and reporting on TMDL activities, and providing forums for information exchange. Actions will include general and specific outreach and communication efforts, stakeholder participation and collaboration, and coordination and collaboration with other agencies.

E. Early Implementation

Early Implementation refers to actions that may be implemented prior to completion of a TMDL. We will pursue opportunities for early actions that promote or possibly eliminate the need for TMDLs using existing authorities, program integration, process improvements, and stakeholder assistance and collaboration. Such opportunities may include: evaluating actions already taking place that may be recognized in the implementation plan for a TMDL; groundtruthing or pilot testing potential actions that may or are being considered for an implementation plan; and identifying and evaluating actions that if implemented may negate the need for a TMDL, such as implementation of existing technology-based requirements or enhancements of them, or clean-up and abatement of hotspots or illicit discharges. Early Implementation will not be early implementation of TMDLs that do not exist, nor will it be used in lieu of TMDLs where TMDLs are needed.

F. Monitoring and Assessment

We will continue to design and implement a comprehensive statewide Surface Water Ambient Monitoring Program (SWAMP) to improve identification of impaired or threatened waters. We will augment SWAMP, where appropriate, with monitoring required by or associated with other water quality programs (NPDES, Storm Water, Nonpoint Source programs, etc.) and with monitoring conducted by other agencies (U.S. Geological Survey, Department of Water Resources, Department of Pesticide Regulation [DPR], etc.).

G. Basin Planning

We will streamline and improve the existing basin planning process based on the new Administrative Procedures Manual chapter on basin planning through training, enhanced coordination and communication, and resourcefulness. We will also pursue options to revise or modify the existing process.

H. TMDL Implementation

We will establish procedures and requirements to implement TMDLs in general and to implement specific TMDLs. We will establish procedures to track and enforce TMDL implementation actions and to monitor effectiveness of actions. We will also establish adaptive management procedures to ensure that implementation actions result in attainment of water quality standards. We will use and enhance existing regulatory mechanisms, and where necessary, establish new ones or seek collaboration with other agencies with applicable authorities.

I. Budget Development and Management

We will address budget issues relevant to TMDL efforts. They include: assessment and management of existing budget allocations; use or redirection of funds associated with other programs; development of initiatives to seek additional resources through the State budget process; and development of initiatives to seek resources through external sources such as dischargers or other collaborators.

VII. ACTIONS TO IMPLEMENT THE STRATEGIES

Described below for each strategy are actions, tasks, products/deliverables, and due dates. With each edition of the Action Plan, these elements will be updated and expanded. Attachment 2 provides a compilation of all the actions and products and the timeline for them.

A. TMDL Program Structure and Management

We will articulate and solidify expectations for TMDL development, products, and timelines, and communicate these expectations to all staff involved in TMDL development. The current program structure related to TMDL efforts will be assessed, and improvements and organizational options to address them will be identified and established. We will identify the interrelationship of TMDL efforts with other water quality programs and establish mechanisms to ensure effective program collaboration and integration. Roles and responsibilities of management and staff within the TMDL program and other water quality programs will be articulated. The role of management advocates with responsibility for TMDL efforts and integration of TMDL efforts with other water quality programs will be defined, and individuals will be assigned to these new roles. We will establish communication procedures and expectations within the TMDL program and related programs.

Action 1: Program Structure Assessment and Improvement

Description: The expectations of the TMDL Program at the State Board and the Regional Boards will be articulated. Expectations for products, timelines, tracking and documentation, and legal commitments will be communicated to all staff. Integral to this effort will be the identification and truncation of non-essential activities that impede the pace of TMDL production. The TMDL program structure will be reviewed and evaluated accordingly. Improvements and options will be identified and established.

Tasks:

- Articulate expectations regarding TMDL program objectives and products.
- Assess current program structure, including roles and responsibilities of State and Regional Board TMDL Team members and staff of related programs.
- Identify needed improvements in program structure and present organizational options to address them to MCC.
- Implement program improvements approved by MCC.

Products/Deliverables and Due Dates:

Product/Deliverable	Due Date
Program Structure Improvement Plan	February 2002
MCC review and approval of plan	March 2002
Implement structural improvements	Ongoing (beginning February 2002)

Action 2: Program Integration

Description: TMDL efforts encompass activities associated with nearly all other water quality programs. We will establish a clear understanding of these interrelationships (particularly the NPDES and Nonpoint Source Programs) and establish mechanisms to ensure effective collaboration and integration of program efforts, and to prevent conflicts or redundancies between these programs and TMDL efforts.

Tasks:

- Identify programs (e.g., NPDES Wastewater, NPDES Storm Water, and Nonpoint Source programs) associated with TMDLs in general and with specific TMDL projects.
- Describe interrelationships between TMDLs and these programs.
- Identify roles and responsibilities of these programs and program staff, and establish management advocates or other mechanisms to ensure effective collaboration and integration, and to prevent conflicts or redundancies between these programs and TMDL efforts.

Products/Deliverables and Due Dates:

Product/Deliverable	Due Date
Matrix of TMDL projects and affected programs	February 2002
Program interrelationship report with opportunities for improvement	March 2002
Identify key roles and responsibilities to maintain and improve integration	March 2002
Assign staff or functions as necessary to ensure integration	Ongoing (beginning March 2002)

Action 3: Program Management

Description: We will review the roles and responsibilities of management and staff within the TMDL program at the State Board and Regional Boards. This effort will include executive management and division management at the State Board, the Management Coordinating Committee (State Board management and Regional Board Executive Officers), the Assistant Executive Officers, the Statewide TMDL Program Manager, the TMDL Program Coordinator, the TMDL Roundtable, and others as necessary. The role of TMDL management advocates will be defined. We will identify key individuals to serve as management advocates with responsibility for TMDL efforts (including the TMDL Initiative and this Action Plan), and integration and coordination of TMDL efforts with other water quality programs and the Strategic Plan. We will establish communication procedures and expectations with the TMDL program and interrelated programs.

Tasks:

- Review management roles and responsibilities.
- Define the role and responsibilities for management advocates.
- Identify management advocates.
- Establish management advocates expectations for TMDL efforts and products (including the TMDL Initiative and this Action Plan) and integration and coordination of TMDL efforts with other water quality programs and the Strategic Plan.

Products/Deliverables and Due Dates:

Product/Deliverable	Due Date
Roles and responsibilities of management advocates	January 2002
TMDL program management description	January 2002
Report on expectations of management advocates	February 2002
Memorandum announcing the State and Regional Board management advocates for TMDLs.	February 2002

Action 4: Internal Communication

Description: The importance and complexity of the TMDL program and its interrelationship with other water quality programs calls for effective internal communication. Communication expectations and procedures within the TMDL program and interrelated programs will be established.

Tasks:

- Convene quarterly TMDL Roundtable of State and Regional Board program coordinators.
- Convene annual, two-day TMDL symposiums (Day 1 – discussion sessions; Day 2 – training).
- Identify key communication expectations (management to staff, program to program, State Board to Regional Boards, etc.) and pathways.
- Establish communication procedures.

Products/Deliverables and Due Dates:

<u>Product/Deliverable</u>	<u>Due Date</u>
TMDL symposium	October 2001
Key communication pathways and expectations pathways	February 2002
Communication procedures	March 2002
TMDL symposium	October 2002

B. Information Management

We will establish a user-friendly information management system as part of the existing System for Water Information Management (SWIM) and enhancements to SWIM. This system will include data on all TMDL projects, with more detail for TMDL projects within a 3-year planning horizon, and even more detail associated with tasks in the active fiscal year. The latter will be part of an effort to produce electronic workplans (e-workplans). The information and data in the system will also be used to produce fact sheets, workplans, and other reports for specific TMDL projects. Intranet and Internet web sites will be established for access to the information and relevant products. Contract mechanisms such as master contracts and tracking mechanisms will also be built into the system.

Action 1a: Database Enhancement - Phase One

Description: An existing database in MS Access will be converted to Oracle as part of development of SWIM and e-workplans. The database will include relevant information for all TMDL projects underway. This will include specific tasks/products that will be conducted/produced during the current fiscal year, and associated personnel and contract resources. Projected tasks/products and associated personnel and contract resources for the next two fiscal years will also be entered into the database.

Tasks:

- Convert database to Oracle with enhanced (early) milestones/tasks fields and prepare user guide.
- Enter data for FY 2001/02.
- Define reporting needs, incorporate appropriate formats for reports into database, and revise user guide.
- Produce report(s) based on FY 2001/02 data.
- Enter data for FYs 2002/03 and 2003/04.
- Produce report(s) based on FY 2001/02 data.

Products/Deliverables and Due Dates:

Product/Deliverable	Due Date
Complete database conversion and user guide	January 2002
Complete FY 2001/02 data entry	February 2002
Reports formats and revised user guide	February 2002
FY 2001/02 report(s)	February 2002
Complete data entry for FYs 2002/03 and 2003/04	March 2002

Action 1b: Database Enhancement - Phase Two

Description: The database will be enhanced for planning, reporting, contract tracking, and implementation purposes. Additional information/data fields will include:

- TMDL project problem definition, approach description, major work focus, and weak link(s) or obstacle(s).
- Water quality programs affected.
- Type/extent of stakeholder participation (e.g., mail list, staff workshops, watershed stewardship group with Regional Board lead, Watershed Group with Regional Board participant, TAC, PAG, etc.)
- Interagency coordination required/desired.
- Early implementation focus -- status, opportunities, projects, regulatory options
- Contract tracking information field (e.g., contract #, amount, scope, contractor)
- Implementation milestones (e.g., projects, contacts, lead, duration, Nonpoint Source Management Measures, PYs, contracts, fund source).

The additional information and data associated with these enhancements will be used to produce workplans and fact sheets for TMDL projects and improved justification for project tasks, costs, and timing.

Tasks:

- Define and create enhanced information/data fields and revise user guide.
- Enter additional information/data.
- Define/design enhanced reports/products, incorporate appropriate formats into database, and revise user guide.
- Produce TMDL project workplans/fact sheets.

Products/Deliverables and Due Dates:

Product/Deliverable	Due Date
Complete enhanced fields and user guide	April 2002
Complete additional information/data entry	May 2002
Enhanced report formats and revised user guide	June 2002
TMDL project workplans/fact sheets	July 2002

Action 2: E-Workplan

Description: An important application of the database will be production of electronic workplans (e-workplans). The information/data in the database associated with TMDL phase (TMDL development, implementation planning, basin planning, and implementation), milestones, tasks, costs, and timelines will be used to generate reports that will serve as the annual fiscal year workplans for the TMDL program.

Tasks:

- Generate e-workplan for FY 2001/02 based on database and data entered via Action 1a.
- Generate draft e-workplan for FY 2002/03.
- Revise FY 2002/03 data to reflect FY 2002/03 budget.
- Produce final e-workplan for FY 2002/03.

Products/Deliverables and Due Dates:

Product/Deliverable	Due Date
FY 2001/02 e-workplan	February 2002
Draft FY 2002/03 e-workplan	April 2002
Revise FY 2002/03 data	June 2002
FY 2002/03 e-workplan	July 2002

Action 3: Intranet/Internet Web Pages

Description: Produce appropriate Intranet/Internet access to database, e-workplans, and other products.

Tasks, products, and due dates, etc. to be determined.

Action 4: Tracking Reports

Description: TMDL program workplans will be regularly developed to describe the intended work in the upcoming one- and three-year periods. Reports on the progress of this work will be produced and reviewed on a regular basis.

Tasks, products, and due dates, etc. to be determined by April 2002.

Action 5: Legislature Reports

Description: Annual reports to the legislature required by Section 13191 of the California Water Code on the structure and effectiveness of the water quality program as it relates to Section 303(d) of the Clean Water Act. Additional reports are often required by budget control language.

Tasks, products, and due dates, etc. to be determined by April 2002.

Action 6: Contract Development and Management

Description: Regional Boards rely heavily on their ability to contract for special services needed to complete specific TMDLs. To improve the efficiency of the contracting process, master contracts can be established with the University systems and private consultants to provide TMDL support through a task order mechanism. Initially a master contract with the University systems will be developed. A companion master contract for private sector consultants will follow. The University master contract will be limited to TMDL tasks that match the teaching and research mission of the universities. The private sector contract will be designed to provide broad TMDL support, including technical, administrative, and public process work.

Tasks, products, and due dates, etc. to be determined by April 2002.

C. TMDL Toolbox and Guidelines

We will produce tools and guidelines for listing and delisting impaired water bodies, developing TMDLs, and implementing the TMDL program. These products will include technical tools, methods and procedures for their use, and regulatory and policy tools, guidelines, and procedures for their use. Tools and guidelines will be produced for 303(d) listings, categorical TMDLs (pathogens, pesticides, metals, etc.), and TMDL process elements (numeric targets, source analysis, linkage analysis, allocations, implementation plan, etc.).

Action 1: Impaired Water Bodies Listing/Delisting Tools and Guidelines

Description: The State Board has stated its intent to develop a policy to guide those involved in the listing and delisting of impaired waters (pursuant to Clean Water Act Section 303(d)). The 2002 listing process is currently underway and an official policy cannot be developed in time to apply to the current list process. The 2002 listing effort will instead be used as a scoping mechanism to develop an official policy. The policy will seek to provide consistency among the regions and DWQ in the assessment of data, and in the prioritization of listed waters. The State Board also will address aspects of data quality and sufficiency. The policy will be developed with public participation, including the AB 982 Public Advisory Group (PAG).

Tasks:

- Summarize key points in Regional Board workshops and meetings related to 303(d) listing.
- Summarize key public comments on 2002 list.
- Develop working draft listing policy.
- Conduct public workshops on working draft.
- Develop draft policy.
- Conduct State Board public hearing process (hearing, workshop, response to comments, and adoption).
- Provide Regional Board training and technical support for new policy.

Products/Deliverables and Due Dates:

Product/Deliverable	Due Date
Preliminary summary of key issues	January 2002
Review and feedback by PAG	February 2002
Revised summary of key issues	March 2002
Working draft policy	May 2002
Draft policy	October 2002
State Board consideration	January 2003

Action 2: Categorical TMDL Tools and Guidelines

Description: Tools and guidelines for developing and implementing categorical TMDLs (pathogens, pesticides, metals, etc.) will be produced by forming workgroups of State and Regional Board staff with experience and/or expertise in categorical TMDLs. These will include: how to address the programmatic and technical aspects of TMDL development, including criteria for level of effort (how much is enough); identification of the TMDL elements that are significant and/or pose particular problems (coordinate with Action 3); stakeholder involvement opportunities and issues; interagency issues (collaboration/conflict); and early implementation opportunities. Key to the success of these workgroups will be provision for meeting management, facilitation, and product production support (contract).

Tasks:

- Form categorical TMDL workgroups.
- Compile relevant literature, existing products, and existing tools.
- Identify additional tools, needs, and issues, and schedule for their production, evaluation, and/or resolution.
- Complete compilation of technical tools, methods, and procedures for their use, and regulatory and policy tools, guidelines, and procedures for their use.
- Initiate appropriate approval mechanisms for tools and guidelines.
- Establish standing workgroups or "strike teams" to aid the use of tools and guidelines and to update/revise them as necessary.

Products/Deliverables and Due Dates:

Product/Deliverable	Due Date
Form workgroups	November 2001
Compilation of existing tools	February 2002
Identification of additional tools, needs, and issues	April 2002
Complete compilation of tools and guidelines	October 2002
Initiate approval process	October 2002
Establish standing workgroup or "strike teams"	October 2002

Action 3: TMDL Elements Tools and Guidelines

Description: Complete TMDLs consist of several elements: problem statement, numeric targets, source analysis, linkage analysis, allocations, margin of safety, implementation plan, and monitoring/re-evaluation plan. Tools and guidelines for each of these elements will be produced by workgroups of State and Regional Board staff with experience and/or expertise in these elements. This action area will be coordinated closely with and segue from Action 2.

Tasks:

- Form TMDL element workgroups.
- Compile relevant literature, existing products, and existing tools.
- Identify additional tools, needs, and issues, and schedule for their production, evaluation, and/or resolution.
- Complete compilation of technical tools, methods, and procedures for their use, and regulatory and policy tools, guidelines, and procedures for their use.
- Initiate appropriate approval mechanisms for tools and guidelines.
- Establish standing workgroups or "strike teams" to aid the use of tools and guidelines and to update/revise them as necessary.

Products/Deliverables and Due Dates:

Product/Deliverable	Due Date
Form workgroups	June 2002
Compilation of existing tools	October 2002
Identification of additional tools, needs, and issues	November 2002
Complete compilation of tools and guidelines	March 2003
Initiate approval process	March 2003
Establish standing workgroup or "strike teams"	March 2003

Action 4: TMDL Program Guidelines

Description: The products of the workgroups dedicated to categorical TMDL tools and TMDL elements will be coalesced into consolidated guidelines for developing TMDLs. This effort will require coordinating the efforts of these workgroups, compiling their recommendations, and developing the consolidated guidelines. Products of the workgroups will be implemented as soon as possible and in some cases will precede establishment of the consolidated guidelines. Attachment 3 contains a schedule for producing TMDL guidelines via the combination of Actions 2, 3, and 4.

Tasks:

- Coordinate efforts of categorical and TMDL element workgroups.
- Develop consolidated TMDL development guidelines.
- Conduct approval mechanism for guidelines.

Products/Deliverables and Due Dates:

PRODUCT/DELIVERABLE	DUE DATE
Develop consolidated TMDL development guidelines	July 2003
Establish final TMDL development guidelines	January 2004

D. Outreach, Communication, and Participation

We will develop tools, mechanisms, and procedures to enhance external (other agencies, stakeholders, and public) outreach, communication, and participation. Successful development of TMDLs will require participation and support of various stakeholders. Inherent to this participation and support is the need to ensure that stakeholders are informed of and understand the issues associated with developing the TMDLs. These efforts will include creating and identifying opportunities to enhance collaboration and cooperation with other agencies and stakeholders, more effectively describing and reporting on TMDL activities, and providing forums for information exchange. Actions will include general and specific outreach and communication efforts, stakeholder participation and collaboration, and coordination and collaboration with other agencies.

Action 1: Public Advisory Group (PAG) Involvement and Collaboration

Description: We will seek advise on the TMDL Initiative and this Action Plan from the Public Advisory Group (PAG) that has been established pursuant to AB 982 to assist in the evaluation of TMDL program structure and effectiveness. We have cross-referenced this Action Plan to the PAG consensus recommendations received to date. In the spirit of enhancing collaboration between the PAG and the State Board, we requested and received PAG comments on developing and implementing the strategies and actions of this first edition Action Plan, and will continue this process in subsequent editions. Areas where we seek assistance from the PAG include, but are not limited to, implementing opportunities to improve the basin planning process, developing legislative reports, pursuing needed legislative changes to support or improve TMDLs or the TMDL process (e.g., budget initiatives, basin planning), and engaging other agencies in TMDL development and early implementation.

Tasks:

- Cross-reference Action Plan strategies and actions with PAG consensus recommendations.
- Solicit input from PAG on developing, evaluating, and implementing existing and additional Action Plan strategies and actions.
- Establish tasks for the PAG as part of the Action Plan strategies and actions.

Products/Deliverables and Due Dates:

Product/Deliverable	Due Date
Table of strategies/actions versus consensus recommendations	October 2001
Distribute Action Plan for PAG review.	October and April each year
Receive and consider comments from PAG in revising future additions of the Action Plan.	November and May each year
Establish tasks for the PAG	November and May each year

Action 2: Stakeholder Involvement and Collaboration

Description: Identify and create opportunities to enhance involvement and collaboration with stakeholders. These efforts will include improved outreach and communication associated with Action 3 and improved descriptions and use of stakeholder involvement and collaboration opportunities and mechanisms. Integral to this effort will be the recognition that stakeholders may bring information and expertise to the table. For each TMDL project, we will strive for the most focused and efficient process that allows all stakeholders to effectively participate and ensures balanced representation on any recognized "watershed" or stakeholder forum. Mechanisms will range from compilation and maintenance of interested parties lists to formally recognized and facilitated stakeholder forums.

Tasks:

- Prepare compendium of stakeholder involvement opportunities and mechanisms, with recommendations.
- Provide training in public process facilitation and negotiation/conflict resolution for staff and stakeholders.

Products/Deliverables and Due Dates:

Product/Deliverable	Due Date
Compendium of stakeholder mechanisms	April 2002
Training	Ongoing (beginning April 2002)

Action 3: Outreach and Communication

Description: Methods that Regional Boards are using for outreach and communication will be surveyed and described. Key stakeholders will be identified. Other approaches to outreach and public process will be evaluated and training in outreach and public process will be provided. Methods for documenting and tracking public involvement in TMDL development will be evaluated and established where feasible. We will develop informational items that can be used to communicate current activities in TMDL development. Web based bulletin boards will be evaluated and developed where feasible. Lists of interested parties (other agencies, stakeholders,

and public) will be established and mechanisms to communicate with them (e.g., reports, web site) will be evaluated and established. We will compile relevant information on the TMDL program and TMDL projects. This action area will be coordinated with the information management actions described under Strategy B above.

Tasks:

- Report on Regional Board outreach methods and other available public process techniques.
- Develop and offer outreach training.
- Develop and distribute informational materials, in coordination with OLPA, including TMDL fact sheets for each TMDL unit.
- Enhance TMDL web site.
- Convene biennial or triennial TMDL conferences with State and Regional Board staff and stakeholders.

Products/Deliverables and Due Dates:

Product/Deliverable	Due Date
Methods report	April 2002
Outreach materials	Ongoing
Training module	July 2002
TMDL project fact sheets	July 2002
Enhanced TMDL web site	July 2002
TMDL conference schedule	July 2002

Action 4: Interagency Coordination and Collaboration

Description: Opportunities to enhance coordination and collaboration with other agencies will be pursued. Our TMDL efforts overlap authorities and programs of other agencies. Certain TMDLs are dependent on efforts by these other agencies (e.g., pesticide TMDLs and the USEPA and DPR). In some cases, actions by other agencies may even conflict with or create barriers to TMDL efforts. These opportunities, overlaps, conflicts, and barriers will be identified and appropriate resolutions, agreements, etc. will be pursued.

Tasks, products, due dates, etc. to be determined by April 2002.

E. Early Implementation

Early Implementation refers to actions that may be implemented prior to completion of a TMDL. We will pursue opportunities for early actions that promote or possibly eliminate the need for TMDLs using existing authorities, program integration, process improvements, and stakeholder assistance and collaboration. Such opportunities may include: evaluating existing actions that may be recognized in the implementation plan for a TMDL; groundtruthing or pilot testing potential actions that may or are being considered for an implementation plan; and identifying and evaluating actions that if implemented may negate the need for a TMDL, such as implementation of existing technology-based requirements or enhancements of them, or clean-up and abatement of

hotspots or illicit discharges. Early Implementation will not be early implementation of TMDLs that do not exist, nor will it be used in lieu of TMDLs where TMDLs are needed.

Action 1: Implement Existing Authorities

Description: Pursue opportunities for early action through existing authorities and program integration including implementation and evaluation of existing requirements.

Tasks:

- Review and clarify technology-based requirements for wastewater and stormwater discharges subject to NPDES permits for control of pollutants causing impairment.
- Review and clarify best management practices for nonpoint source discharges for control of pollutants causing impairment.
- Identify toxic hot spots and/or illicit discharges (particularly those currently subject to regulatory action by a Regional Board) that are causing or may be contributing to water quality impairment.
- Assimilate regulatory requirements/pollutant control information into a matrix or other suitable framework that provides access to such information.
- Pursue stakeholder participation (e.g., Stormwater Quality Task Force) in this process.
- Develop “early alarm system” to notify non-TMDL staff when an activity (e.g., issuing a landfill WDR) is relevant to a scheduled or ongoing TMDL effort, and to alert staff to opportunities to implement actions relevant to TMDLs.
- Apply and track existing requirements on a TMDL pollutant category or project-specific basis.

Products/Deliverables and Due Dates:

Product/Deliverable	Due Date
Matrix of regulatory requirements/pollutant control information	Six-month updates starting April 2002
Stakeholder participation	Six-month updates starting April 2002
Use of existing authorities/requirements	Six-month updates starting April 2002
Establish “early implementation alarm”	September 2002

Action 2: Evaluate Potential Actions

Description: Evaluate (groundtruth or pilot test) potential actions for consideration in TMDL implementation plans.

Tasks:

- Identify potential actions for consideration in TMDL implementation plans on a TMDL pollutant category or project-specific basis (clean-up of PCBs within a storm drain).
- Implement and track special studies or pilot projects to evaluate such potential actions.

- Solicit stakeholder participation/assistance including creation of incentives/rewards.
- Assimilate potential action information into accessible framework.

Products/Deliverables and Due Dates:

Product/Deliverable	Due Date
List of potential actions	Six-month updates starting April 2002
List/status of special studies or pilot projects	Six-month updates starting April 2002
Compilation of potential action information	Six-month updates starting April 2002

F. Monitoring and Assessment

We will continue to design and implement a comprehensive statewide Surface Water Ambient Monitoring Program (SWAMP) to improve identification of impaired or threatened waters. We will augment SWAMP, where appropriate, with monitoring required by or associated with other water quality programs (NPDES, Storm Water, Nonpoint Source programs, etc.) and with monitoring conducted by other agencies (U.S. Geological Survey, Department of Water Resources, Department of Pesticide Regulation [DPR], etc.). We will also improve assessment methods and refine environmental indicators. Decision support tools to identify when sufficient information exists for TMDL activities will be developed.

Actions, tasks, products, due dates, etc. to be determined by April 2002.

G. Basin Planning

We will streamline and improve the existing basin planning process based on the new Administrative Procedures Manual chapter on basin planning using the through training, enhanced coordination and communication, and resourcefulness. We will also pursue options to revise or modify the existing process.

Actions, tasks, products, due dates, etc. to be determined by April 2002.

H. TMDL Implementation

We will establish procedures and requirements to implement TMDLs in general and to implement specific TMDLs. We will establish procedures to track and enforce TMDL implementation actions and to monitor effectiveness of actions. We will also establish adaptive management procedures to ensure that implementation actions result in attainment of water quality standards. We will use and enhance existing regulatory mechanisms, and where necessary, establish new ones or seek collaboration with other agencies with applicable authorities.

Actions, tasks, products, due dates, etc. to be determined by April 2002.

I. Budget Development and Management

We will address budget issues relevant to TMDL efforts. They include: assessment and management of existing budget allocations; use or redirection of funds associated with other programs; development of initiatives to seek additional resources through the State budget process; and development of initiatives to seek resources through external sources such as dischargers or other collaborators.

Action 1: TMDL Budget Management

Description: We will document allocation and use of existing TMDL funds and revise the Budget Development and Administration System (BDAS) to reflect allocated resources and to conform to the TMDL program workplan. We will also establish procedures and provide training for TMDL budget management.

Actions, tasks, products, due dates, etc. to be determined by April 2002.

Action 2: Program Fund Integration

Description: TMDL efforts encompass activities associated with nearly all other water quality programs (e.g., NPDES, Storm Water, and Nonpoint Source programs). We will identify tasks associated with these programs that are part of or affect TMDLs (e.g., pollutant source identification, evaluation of pollution prevention or control actions). Where appropriate, we will use or redirect funds associated with these other programs for these tasks.

Actions, tasks, products, due dates, etc. to be determined by April 2002.

Action 3: State Budget Initiatives

Description: We will continue to use the Budget Change Proposal procedures to seek additional state resources to enhance development and implementation of TMDLs.

Actions, tasks, products, due dates, etc. to be determined by April 2002.

Action 4: External Source Support

Description: We will pursue and implement agreements with other agencies and dischargers to use and share their resources for development and implementation of TMDLs.

Actions, tasks, products, due dates, etc. to be determined by April 2002.

TMDL INITIATIVE ACTION PLAN

Edition 1.0

ATTACHMENT 1

TMDL Regional Board Actions

By December 2002

TMDL Regional Board Actions By December 2002

Region 1

TMDL Planning Unit	Milestones	Date of Action	Revised Completion Date	Actual Completion Date
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Region 1 expects Regional Board consideration of at least one TMDL by December 2002.

Region 2

TMDL Planning Unit	Milestones	Date of Action	Revised Completion Date	Actual Completion Date
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San Francisco Bay - Mercury

Basin Planning	Prepare Amendment	08/2001		
	Regional Board Hearing Date	11/2001		

South San Francisco Bay - Copper

Basin Planning	Prepare Amendment	01/2002		
	Regional Board Hearing Date	06/2002		

South San Francisco Bay - Nickel

Basin Planning	Prepare Amendment	01/2002		
	Regional Board Hearing Date	06/2002		

TMDL Regional Board Actions By December 2002

Region 3

TMDL Planning Unit	Milestones	Date of Action	Revised Completion Date	Actual Completion Date
<u><i>Chorro Creek - Metals</i></u>				
Basin Planning	Prepare Amendment	06/2001		
	Regional Board Hearing Date	12/2001		
<u><i>Las Tablas Creek- Nacimiento Reservoir - Mercury</i></u>				
Basin Planning	Prepare Amendment	12/2001		
	Regional Board Hearing Date	06/2002		
<u><i>Morro Bay - Nutrients</i></u>				
Basin Planning	Prepare Amendment	12/2001		
	Regional Board Hearing Date	06/2002		
<u><i>Morro Bay - Pathogens</i></u>				
Basin Planning	Prepare Amendment	06/2002		
	Regional Board Hearing Date	12/2002		
<u><i>Morro Bay - Siltation</i></u>				
Basin Planning	Prepare Amendment	06/2001		
	Regional Board Hearing Date	12/2001		
<u><i>San Lorenzo River - Siltation</i></u>				
Basin Planning	Prepare Amendment	06/2002		
	Regional Board Hearing Date	06/2002		
<u><i>San Luis Obispo Creek - Nutrients</i></u>				
Basin Planning	Prepare Amendment	06/2002		

TMDL Regional Board Actions By December 2002

Region 4

TMDL Planning Unit	Milestones	Date of Action	Revised Completion Date	Actual Completion Date
<u><i>Ballona Creek - Coliform</i></u>				
Basin Planning	Regional Board Hearing Date	10/2001	7/1/02	
<u><i>Ballona Creek - Trash</i></u>				
Basin Planning	Regional Board Hearing Date	04/2001	8/1/01	
<u><i>Calleguas Creek - Nutrients</i></u>				
Basin Planning	Regional Board Hearing Date	01/2002		
<u><i>Dominguez Channel - Coliform</i></u>				
Basin Planning	Regional Board Hearing Date	02/2002	4/1/02	
<u><i>Los Angeles River - Coliform</i></u>				
Basin Planning	Regional Board Hearing Date	07/2001	12/1/01	
<u><i>Los Angeles River - Metals</i></u>				
Basin Planning	Regional Board Hearing Date	07/2002	6/1/02	
<u><i>Los Angeles River - Nutrients</i></u>				
Basin Planning	Regional Board Hearing Date	07/2001	12/1/01	
<u><i>Malibu Creek - Coliform</i></u>				
Basin Planning	Regional Board Hearing Date	06/2001	1/1/02	
<u><i>Malibu Creek - Nutrients</i></u>				
Basin Planning	Regional Board Hearing Date	06/2001	1/1/02	
<u><i>Marina del Rey Harbor - Coliform</i></u>				
Basin Planning	Regional Board Hearing Date	12/2002		
<u><i>McGarath Beach - Coliform</i></u>				
Basin Planning	Regional Board Hearing Date	10/2002		
<u><i>San Gabriel River - Nutrients</i></u>				
Basin Planning	Regional Board Hearing Date	11/2002		
<u><i>Santa Clara River - Chloride</i></u>				
Basin Planning	Regional Board Hearing Date	08/2001	11/1/01	12/1/00
<u><i>Santa Monica Bay Beaches - Coliform</i></u>				
Basin Planning	Regional Board Hearing Date	01/2002		

TMDL Regional Board Actions By December 2002

Region 5

TMDL Planning Unit	Milestones	Date of Action	Revised Completion Date	Actual Completion Date
<u><i>Clear Lake - Mercury</i></u>				
Basin Planning	Regional Board Hearing Date	12/2002		
<u><i>Sacramento and Feather Rivers - Diazinon</i></u>				
Basin Planning	Prepare Amendment	09/2002		
<u><i>Sacramento River - Cadmium, Copper, Zinc</i></u>				
Basin Planning	Regional Board Hearing Date	08/2001		
<u><i>San Joaquin River - Electrical Conductivity and Boron</i></u>				
Basin Planning	Prepare Amendment	09/2002		

Region 6

TMDL Planning Unit	Milestones	Date of Action	Revised Completion Date	Actual Completion Date
<u><i>Indian Creek Reservoir - Nutrients</i></u>				
Basin Planning	Regional Board Hearing Date	06/2002		

Region 7

TMDL Planning Unit	Milestones	Date of Action	Revised Completion Date	Actual Completion Date
<u><i>New River - Sediment</i></u>				
Basin Planning	Regional Board Hearing Date	12/2001		

TMDL Regional Board Actions By December 2002

Region 8

TMDL Planning Unit	Milestones	Date of Action	Revised Completion Date	Actual Completion Date
<u><i>Newport Bay - diazinon, chlopyrifos</i></u>				
Basin Planning	Regional Board Hearing Date	06/2002		

Region 9

TMDL Planning Unit	Milestones	Date of Action	Revised Completion Date	Actual Completion Date
<u><i>Chollas Creek - Diazinon</i></u>				
Basin Planning	Prepare Amendment	07/2002	7/1/02	
	Regional Board Hearing Date	04/2002		
<u><i>Chollas Creek - Metals</i></u>				
Basin Planning	Prepare Amendment	01/2002	12/1/02	
	Regional Board Hearing Date	08/2002		
<u><i>Rainbow Creek - Nutrients</i></u>				
Basin Planning	Regional Board Hearing Date	04/2002		
Implementation	Prepare Amendment	07/2001	7/1/02	
<u><i>San Diego Bay - Shelter Island Yacht Basin - Dissolved Copper</i></u>				
Basin Planning	Prepare Amendment	07/2002	10/1/02	
	Regional Board Hearing Date	08/2002		

TMDL Initiative Action Plan Timeline

Strategy/Action/Product	October	November	December	January	February	March	Spring 02	Summer 02	Fall 02	Winter 03	Other
A. Program Structure and Management											
Action 1: Structure Assessment											
Structure Improvement Plan											
MCC review and approval of plan											
Implementation of structural improvements											
Action 2: Program Integration											
Matrix of TMDL proj. and affected programs											
Program interrelationship report											
Identify key roles and responsibilities											
Assign staff & functions											
Action 3: Program Management											
Roles of Management Advocates											
Program management description											
Report on expectations											
Memo announcing Advocates											
Action 4: Internal Communication											
TMDL symposium											
Communication pathways and expectations											
Communication procedures											
TMDL symposium											
B. Information Management											
Action 1a: Database - Phase 1											
Database conversion & user guide											
FY 2001/02 data entry											
Report formats & revised user guide											
FY 2001/02 report											
Data entry FY 02-03, FY 03-04 data											
Action 1b: Database - Phase 2											
Enhanced data fields											
Added data entry											
Enhanced reports/revised user guide											
TMDL project workplans/ fact sheets											
Action 2: E-Workplan											
FY 01/02 e-workplan											
Draft 02/03 e-workplan data entry											
Revise 02/03 data											
Final FY 02/03 e-workplan											

Attachment 2

Strategy/Action/Product		October	November	December	January	February	March	Spring 02	Summer 02	Fall 02	Winter 03	Other
Action 3: Intranet/Internet Web Pages												
TBD (To be determined)												
Action 4: Tracking reports												
TBD												
Action 5: Legislative Reports												
TBD												
Action 6: Contract Development & Management												
TBD												
C. TMDL Toolbox and Guidelines												
Action 1: Listing guidelines												
Preliminary summary of key issues												
Review and feedback from PAG												
Revised summary of issues												
Working draft policy												
Draft policy												
State Board consideration												
OAL approval												
Action 2: Categorical TMDL Tools												
Form workgroups												
Compile existing tools												
Identify additional tools and guidelines												
Complete compilation of tools and guidelines												
Initiate approval process												
Establish strike teams												
Action 3: TMDL Elements Tools												
Form workgroups												
Compile existing tools												
Identify additional tools, needs and issues												
Compile compilations of tools and guidelines												
Initiate approval process												
Establish strike teams												
Action 4: TMDL Program Guidelines												
Consolidate TMDL development guidelines												
Establish Final TMDL development guidelines												
D. Outreach, Communication, and Participation												
Action 1: PAG Involvement and collaboration												
Tbl. strategies/actions x recommendations												
Initiative and Action Plan, PAG review												
PAG comments/ revised Action Plan												
PAG Tasks												

Strategy-Action-Product		October	November	December	January	February	March	Spring 02	Summer 02	Fall 02	Winter 03	Other
Action 2: Stakeholder Involvement and Collaboration												
Compendium of stakeholder mechanisms												
Training												
Action 3: Outreach and Communication												
Methods report												
Outreach materials		ongoing										
Training module												
TMDL project fact sheets												
Enhanced TMDL web site												
TMDL conference schedule												
Action 4: Interagency Coordination & Collaboration												
TBD												
E. Early Implementation												
Action 1: Implement Existing Authorities												
Matrix of regulatory requirements/controls												
Stakeholder participation												
Use of existing authorities/requirements												
Early implementation "alarm"												
Action 2: Evaluate Potential Actions												
List of potential actions												
List/status of special studies or pilots												
Compendium of potential actions												
F. Monitoring												
Actions TBD												
G. Basin Planning												
Actions TBD												
H. TMDL Implementation												
Actions TBD												
I. Budget Development and Management												
Action 1: Budget Management												
TBD												
Action 2: Program Fund Integration												
TBD												
Action 3: State Budget Initiatives												
TBD												
Action 4: External Source Support												
TBD												

Proposed TMDL Guideline Schedule

December-01

Task	Fall 01	Winter 02	Spring 02	Summer 02	Fall 02	Winter 03	Spring 03	Summer 03	Fall 03	Winter 04
Review and finalize schedule										
Workgroup assistance contract										
Form Categorical Workgroups										
Compile existing Categorical tools										
Identify Categorical tools, needs, issues										
Form TMDL Elements workgroup										
Complete draft Categorical guidelines										
Compile existing Element tools										
Identify Elements tools, needs, issues										
Complete draft Elements guidelines										
DWQ Consolidate draft elements and category guidelines										
Workgroup and Public review of draft consolidated guidelines										
Approval process for guidelines										

Production of guidelines for developing TMDLs will be coordinated by DWQ and rely on workgroups on categorical TMDL tools and TMDL element tools. DWQ will consolidate products from the workgroups to form the draft guidelines. Workgroups will be supported by facilitators and administrative support provided through contract services.

Appendix C

RESPONSE TO AB 982 PAG CONSENSUS RECOMMENDATIONS

PAC Consensus Recommendations Topic	PAC Consensus Recommendations Recommendation(s)	Strategy	Implementation Plan
Program Funding	PAG finds that there are inadequate resources for the state to fulfill its obligation under the TMDL program. Therefore, PAG recommends there be adequate resources for the development and implementation of effective TMDLs statewide. Further, PAG recommends that the RWQCBs assess and request resource needs for an adequate 303(d) listing process and TMDL development/implementation through the SWRCB from the Legislature.	I – Budget Development and Management	Action 1 – TMDL Budget Management Action 2 – Program Fund Integration Action 3 – State Budget Initiatives Action 4 – External Source Support
	The SWRCB and RWQCBs should allocate adequate resources and staff positions to develop and maintain appropriate TMDL expertise in-house.	I – Budget Development and Management	Action 1 – TMDL Budget Management Action 2 – Program Fund Integration
	The SWRCB and RWQCBs need an efficient process for acquisition and retention of necessary scientific and technical expertise.	C – TMDL Toolbox and Guidelines I – Budget Development and Management	Action 1 – Impaired Water Bodies Listing/Delisting Tools and Guidelines Action 2 – Categorical TMDL Tools and Guidelines Action 3 – TMDL Elements Tools and Guidelines Action 4 – TMDL Program Guidelines Action 1 – TMDL Budget Management Action 2 – Program Fund Integration

Goal	PAC Consensus Recommendations (Recommendation(s))	Strategies	Addressed by TMDL Initiative Action Plan Action(s)
	The PAG encourages the RWQCBs to consider TMDL development when approving Supplemental Environmental Projects (SEPs) not otherwise legally required of dischargers.	I – Budget and Development and Management	Action 4 – External Source Support In addition, the latest draft of the SWRCB's Enforcement Policy supports this recommendation.
Listing of Impaired Waters	The State Water Resources Control Board should formally adopt a Policy to maximize the RWQCB's consideration of existing data during the 303(d) process.	C – TMDL Toolbox and Guidelines	Action 1 – Impaired Water Bodies Listing/Delisting Tools and Guidelines
	The State Water Resources Control Board should formally adopt a Policy, and a means to implement the Policy, for the RWQCBs on what constitutes reasonable minimum acceptable credible information. The Policy should also include the methods for determining whether to list or de-list water segments on the section 303(d) list consistent with Federal law.	C – TMDL Toolbox and Guidelines	Action 1 – Impaired Water Bodies Listing/Delisting Tools and Guidelines
Statewide Process for Developing TMDLs	TMDLs should be established and implemented in accordance with the Clean Water Act and, where applicable, the Porter-Cologne Water Quality Control Act and other relevant state and federal laws.	All	Various actions

PAG Consensus Recommendations			
Topic	Recommendations	Strategy/Action	Implementation/Action
	RWQCBs must maintain active oversight over TMDL development sufficient to assure unbiased technical assessment.	C – TMDL Toolbox and Guidelines	<p>Action 1 – Impaired Water Bodies Listing/Delisting Tools and Guidelines</p> <p>Action 2 – Categorical TMDL Tools and Guidelines</p> <p>Action 3 – TMDL Elements Tools and Guidelines</p> <p>Action 4 – TMDL Program Guidelines</p>
		D – Outreach Communication, and Participation	<p>Action 2 – Stakeholder Involvement and Collaboration</p> <p>Action 3 – Outreach and Communication</p>
TMDL Development (Timeliness)	The Legislature should provide adequate funding and staffing to allow the State and RWQCBs to immediately initiate the development and implementation of high priority TMDLs.	A – TMDL Program Structure and Management	<p>Action 1 – Program Structure Assessment and Improvement</p> <p>Action 2 – Program Integration</p>
		D – Outreach Communication, and Participation	Action 1 – PAG Involvement and Collaboration
		I – Budget Development and Management	Action 3 – State Budget Initiatives
	All TMDLs should be established as soon as possible recognizing varying levels of TMDL complexity.	All	Various actions

Topic	PAO Consensus Recommendations (Recommendation(s))	Strategy(ies)	Addressed by TMDL Initiative Action Plan Action(s)
	<p>Ways to assist in completing TMDLs more quickly may include: Training (such as USEPA's Water Quality Academy); Technical Centers (which would allow RWQCBs to share information and approaches; "Strike forces" or teams of SWRCB staff with specific expertise (e.g., nutrients, metals, sedimentation, etc.) that could address TMDL development in Regions; bring in staff from other agencies to assist in TMDL development (e.g., on pesticide issues); start some difficult TMDLs early as opposed to tackling the easy ones only at first (makes schedules more realistic); group related pollutants to expedite TMDL technical work (e.g. working on multiple pollutants in a waterbody).</p>	<p>A – TMDL Program Structure and Management</p> <p>B – Information Management</p> <p>C – TMDL Toolbox and Guidelines</p> <p>D – Outreach Communication, and Participation</p> <p>E – Early Implementation</p>	<p>Action 4 – Internal Communication</p> <p>Action 1 – Database Enhancement Action 2 – E-Workplan Action 3 – Intranet/Internet Web Pages Action 4 – Tracking Reports</p> <p>Action 2 – Categorical TMDL Tools and Guidelines Action 3 – TMDL Elements Tools and Guidelines Action 4 – TMDL Program Guidelines</p> <p>Action 4 [misnumbered 3 in Action Plan] – Interagency Coordination and Collaboration</p> <p>Action 1 – Implement Existing Authorities</p>
Role of Science	<p>Encourage, where appropriate, early external peer review.</p>	<p>D – Outreach Communication, and Participation</p> <p>E – Early Implementation</p>	<p>Action 1- PAG Involvement and Collaboration Action 2 – Stakeholder Involvement and Collaboration Action 3 – Outreach and Communication</p> <p>Action 1 – Implement Existing Authorities Action 2 – Evaluate Potential Actions</p>

PAG Consensus Recommendations		Strategy	
Topic	Recommendation(s)	Strategy	Implementation
	Science should play a role in the development of TMDLs.	C – TMDL Toolbox and Guidelines	Action 1 – Impaired Water Bodies Listing/Delisting Tools and Guidelines Action 2 – Categorical TMDL Tools and Guidelines Action 3 – TMDL Elements Tools and Guidelines
	The level of scientific understanding and technical rigor will vary for individual TMDLs.	C – TMDL Toolbox and Guidelines	Action 1 – Impaired Water Bodies Listing/Delisting Tools and Guidelines Action 2 – Categorical TMDL Tools and Guidelines Action 3 – TMDL Elements Tools and Guidelines
Stakeholder Involvement	RWQCB should be open to input during the TMDL process.	D – Outreach Communication, and Participation E – Early Implementation	Action 1 – PAG Involvement and Collaboration Action 2 – Stakeholder Involvement and Collaboration Action 3 – Outreach and Communication
	TMDLs need not be based on consensus but everyone needs to be heard.	D – Outreach Communication, and Participation E – Early Implementation	Action 1 – Implement Existing Authorities Action 1 – PAG Involvement and Collaboration Action 2 – Stakeholder Involvement and Collaboration Action 3 – Outreach and Communication Action 1 – Implement Existing Authorities

PAC Consensus Recommendation		Addressed by TMDL Initiative Action Plan	
Topic	Recommendation(s)	Strategies	Actions
	The RWQCB should publish schedules for the start of the stakeholder participation process.	B – Information Management D – Outreach Communication, and Participation	Action 1 – Database Enhancement Action 1 – PAG Involvement and Collaboration Action 2 – Stakeholder Involvement and Collaboration Action 3 – Outreach and Communication
	The RWQCBs should carefully lay out schedules to get TMDLs completed and implemented.	B – Information Management	Action 1b – Database Enhancement-Phase One (e.g., individual TMDL project workplans)
	Recommended framework for the TMDL development should include opportunities for public input, for new listing, for scoping of the TMDL, on the draft TMDL and on final adoption.	C – TMDL Toolbox and Guidelines D – Outreach Communication, and Participation E – Early Implementation	Action 1 – Impaired Water Bodies Listing/Delisting Tools and Guidelines Action 1 – PAG Involvement and Collaboration Action 2 – Stakeholder Involvement and Collaboration Action 3 – Outreach and Communication
	Develop a mechanism, including funding, to encourage and maintain balanced stakeholder representation, and assure stakeholders are afforded the opportunity to participate meaningfully, in accordance with TMDL deadlines.	D – Outreach Communication, and Participation E – Early Implementation	Action 1 – Implement Existing Authorities Action 2 – Evaluate Potential Actions Action 1 – PAG Involvement and Collaboration Action 2 – Stakeholder Involvement and Collaboration Action 3 – Outreach and Communication Action 1 – Implement Existing Authorities Action 2 – Evaluate Potential Actions

PAG Consensus Recommendations		Action Plan	
Topic	Recommendations	Strategies	Actions
	RWQCBs should consider education and outreach as part of TMDL development and implementation. Public outreach and education are important aspects in issue resolution and attaining water quality standards.	D – Outreach Communication, and Participation E – Early Implementation	Action 1 – PAG Involvement and Collaboration Action 2 – Stakeholder Involvement and Collaboration Action 3 – Outreach and Communication Action 4 – Interagency Coordination and Collaboration Action 1 – Implement Existing Authorities Action 2 – Evaluate Potential Actions Action 1 – Database Enhancement Action 2 – E-Workplan Action 1 – PAG Involvement and Collaboration Action 2 – Stakeholder Involvement and Collaboration Action 3 – Outreach and Communication Action 4 – Interagency Coordination and Collaboration
	In certain circumstances, and where deemed appropriate by the RWQCB, the process may be modified to allow for expanded or diminished public participation.	B – Information Management D – Outreach Communication, and Participation	Action 1 – PAG Involvement and Collaboration Action 2 – Stakeholder Involvement and Collaboration Action 3 – Outreach and Communication Action 4 – Interagency Coordination and Collaboration
Legacy Pollutants	Consistent with achieving water quality standards, the RWQCBs should establish a waste load or load allocation for sources of legacy pollutants that are currently contributing to the impairment.	C – TMDL Toolbox and Guidelines	Action 2 – Categorical TMDL Tools and Guidelines
	The State and RWQCBs should aggressively use existing legal authorities to identify and hold responsible those parties contributing legacy sources of pollutants causing impairments.	C – TMDL Toolbox and Guidelines E – Early Implementation	Action 2 – Categorical TMDL Tools and Guidelines Action 1 – Implement Existing Authorities Action 2 – Evaluate Potential Actions

Topic	PAO Consensus Recommendations (Recommendation(s))	Strategy(ies)	Addressed by TMDL Initiative/Action Plan Action(s)
TMDL Implementation	The Implementation Plan is an essential part of the TMDL process.	C – TMDL Toolbox and Guidelines E – Early Implementation H – TMDL Implementation	Action 3 – TMDL Elements Tools and Guidelines Action 2 – Evaluate Potential Actions Specific actions to be determined
	The Implementation Plan is the blueprint which governs actions by all contributing sources to meet TMDL targets.	C – TMDL Toolbox and Guidelines E – Early Implementation H – TMDL Implementation	Action 3 – TMDL Elements Tools and Guidelines Action 2 – Evaluate Potential Actions Specific actions to be determined
	The Implementation Plan should be a formal written document that should be adopted by a RWQCB when they adopt the corresponding TMDL.	H – TMDL Implementation	Specific actions to be determined
	Implementation plans should identify specific control and/or management actions for all sources or categories of sources of pollutants consistent with the Clean Water Act, and where applicable, the Porter-Cologne Water Quality Control Act.	H – TMDL Implementation	Specific actions to be determined

Topic	PA/C Consensus Recommendations	Strategies	TMDL/MS4/Agg. Discharge Plan
Offsets	<p>Legal and liability issues; Specification of the manner in which a load allocation (load reduction) would be credited to a specific offset; Site-specific characteristics of waterbodies; Specific characteristics of pollutants; Accountability issues (e.g., how will a load reduction be measured?); Environmental justice implications; Location of the source; Timing of the reduction; Mandatory vs. voluntary reductions; Ongoing responsibility and maintenance of the reductions; Appropriate offset ratio(s); Agency management, including funding for an offset program; Type of source (nonpoint vs. point source); Definition of required pollutant reductions; Whether pollutant reductions that are otherwise required or would otherwise occur should be the subject of offsets.</p>	<p>-- Not addressed by TMDL Initiative Action Plan --</p>	<p>Based on the outcome of the July 2001 Pollutant Trading Workshop, offsets will be addressed case-by-case with individual TMDLs. Discharger proposals will be considered.</p>

PACIC Consensus Recommendations		Addressed by TMDL Initiative Action Plan	
Topic	Recommendation(s)	Strategy/ies	Action(s)
Adaptive Management of Implementation Plan	The implementation plan may include interim milestones for load reductions.	C – TMDL Toolbox and Guidelines E – Early Implementation H – TMDL Implementation	Action 2 – Categorical TMDL Tools and Guidelines Action 3 – TMDL Elements Tools and Guidelines Action 2 - Evaluate Potential Actions Specific actions to be determined
Cross-Jurisdictional Issues	The RWQCBs shall seek collaboration with other government agencies with applicable authorities as needed or required to ensure the efficient implementation of the TMDL.	D – Outreach Communication, and Participation	Action 4 – Interagency Coordination and Collaboration
	TMDLs may, in some instances, involve cross-media sources of pollution, which will need to be controlled in order to implement the TMDL. CalEPA should design and implement a specific mechanism that assures that any TMDL allocation to a source outside the jurisdiction of the RWQCB [is] adequately enforced and implemented.	D – Outreach Communication, and Participation	Action 4 – Interagency Coordination and Collaboration

Appendix D

**TMDL Requirements
(Clean Water Act and 40 CFR Citations)**

TMDL Requirements (Clean Water Act and 40 CFR Citations)

Clean Water Act

§ 303(d)(1)(A):

Each state shall identify those waters within its boundaries for which the effluent limitations required by section 301(b)(1)(A) and section 301(b)(1)(B) are not stringent enough to implement any water quality standard applicable to such waters. The State shall establish a priority ranking for such waters, taking into account the severity of the pollution and the uses to be made of such waters.

§ 303(d)(1)(C):

Each state shall establish for the waters identified in paragraph (1)(A) of this subsection, and in accordance with the priority ranking, the total maximum daily load, for those pollutants which the Administrator identifies under section 304(a)(2) as suitable for such calculation. Such load shall be established at the level necessary to implement the applicable water quality standards with seasonal variations and a margin of safety, which takes into account any lack of knowledge concerning the relationship between effluent limitations and water quality.

§ 303(d)(1)(B):

Each state shall identify those waters or parts thereof within its boundaries for which controls on thermal discharges under section 301 are not stringent enough to assure protection and propagation of a balanced indigenous population of shellfish, fish, and wildlife.

§ 303(d)(1)(D)

Each state shall estimate for the waters identified in paragraph (1)(B) of this subsection the total maximum thermal load required to assure protection and propagation of a balanced, indigenous population of shellfish, fish, and wildlife. Such estimates shall take into account the normal water temperatures, flow rates, seasonal variations, existing sources of heat input, and the dissipative capacity of the identified waters or parts thereof. Such estimates shall include a calculation of the maximum heat input that can be made into each such part and shall include a margin of safety which takes into account any lack of knowledge concerning the development of thermal water quality criteria for such protection and propagation in the identified waters or parts thereof.

Note: Administrator refers to the administrator of U.S. EPA. § 301 references relate to technology based effluent limits required for point sources. § 502 of the Act defines point sources. Nonpoint sources are not explicitly defined in the Act. § 304 requires the Administrator to publish water quality criteria and to identify pollutants suitable for TMDL development.

Code of Federal Regulations, Part 40 (paraphrased, actual text not included):

§ 130.2(f), Loading Capacity:

The greatest amount of loading (introduction of a pollutant) that a water can receive without violating water quality standards.

§ 130.2(d), Water Quality Standards:

Provisions of state or federal law, which consist of designated uses or existing uses and water quality criteria for those uses in those waters. Standard must be designed to protect the public health or welfare, restore and maintain the biological, physical, and chemical integrity of the waters, and enhance water quality.

§ 130.2(i), Total Maximum Daily Load (TMDL):

The sum of the individual Waste Load Allocations and Load Allocations and natural background. Can be expressed in mass per time, toxicity, or other appropriate measure. Waste load allocations (and therefore effluent limits) can be made less stringent (than application of standards using existing formulas might suggest) if implementing Load Allocations can provide sufficient reductions to assure attainment of standards.

§ 130.2(g), Load Allocations:

The portion of a receiving water's loading capacity attributed to natural background or present or future nonpoint sources.

§ 130.2(h), Wasteload Allocations:

The portion of a receiving water's loading capacity allocated to one or more of its existing or future point sources.

§ 130.7(a), TMDLs, General:

The states continuing planning process shall describe the process for identifying water quality limited segments needing TMDLs, priority setting, and how the TMDLs are developed and implemented (including public participation). [Note: 40 CFR § 130.5 states that the State may determine the format of its CPP as long as the minimum requirements are met. California has used a CPP document, written reports, conferences, workgroups, program workplans, and ongoing management discussions to fulfill CPP requirements.)

§ 130.7(b), Identifying and priority setting for water quality limited segments:

Requires states to identify and rank in priority all water bodies not attaining standards due to pollutants and thermal discharges. Standards include numeric or narrative criteria, beneficial uses and antidegradation (see § 303 and 40 CFR 131). List must identify suspected pollutant of concern. Priority must take account of severity of pollution and beneficial uses. In developing the list, states must assemble and evaluate readily available information; i.e., from § 305(b) report or § 319 (nonpoint source) assessment, files, agency or university reports, or reports from the public. Listing decisions must be documented. Must explain any non-listing where readily available information suggests a problem (e.g., bad QA, countervailing information, etc.)

§ 130.7(c), Development of TMDLs:

A TMDL is required for each listed water body. The TMDL must be set at a level sufficient to attain and maintain applicable standards with seasonal variation and a margin of safety. TMDLs must account for critical conditions. May use pollutant specific or cumulative (i.e., biomonitoring) approach and must account for all pollutants suspected of preventing attainment of standards.

§ 130.7(d), Submission of lists and TMDLs to USEPA for approval:

List of water quality limited segments must be submitted to USEPA for approval once every two years (by April 1 of even numbered years). EPA must make any changes it deems appropriate then send the list and TMDLs back to the State for incorporation into Basin Plans.

§ 130.6(c), Water Quality Management Plans:

Basin Plans serve as California's Water Quality Management Plans (i.e., § 130.7(c), applies to Basin Plans for purposes of implementing the Clean Water Act). Several elements are required to be included directly or by reference including any TMDLs approved by USEPA.

Appendix E

AB 982 PUBLIC ADVISORY GROUP MEMBERS

AB 982 PUBLIC ADVISORY GROUP

MEMBER	ALTERNATE
Tess Dunham California Farm Bureau	Brad Luckey Imperial Irrigation District
Paul Martin Western United Dairymen	David Albers Milk Producers Council
William J. Thomas Livingston & Mattesich Law Corporation	Susan LaGrande Director, Public Affairs California Cattlemen's Association
Mark Rentz California Forestry Association	Mark Pawlicki Simpson Timber Company
Cliff Moriyama California Building Industry Assn.	Sat Tamaribuchi The Irvine Company
Jim Scanlin Alameda Co. Stormwater Program	Armand Ruby Larry Walker & Associates
Craig Johns California Resource Strategies	Dave Arrieta DNA Associates
Patti Krebs Industrial Environmental Association	David Ivester Bay Planning Coalition Washburn, Briscoe & McCarthy Randal Friedman Navy Region Southwest
Roberta Larson CASA	Vicki Conway County Sanitation Districts of Los Angeles County

MEMBER	ALTERNATE
Jim Noyes Chief Deputy Director	Allen Campbell Humboldt County Public Works
David W. Tucker City of San Jose	Dave Kiff City of Newport Beach
David Bolland Association of California Water Agencies	Lynda Smith Metropolitan Water District of Southern California
Linda Sheehan Director, Pacific Region Office The Ocean Conservancy	Lena Brook Clean Water Action
Jonathan Kaplan Waterkeepers Northern California	Bill Jennings Deltakeeper
Bob Caustin Defend the Bay	Bonnie Ahrens Defend the Bay
Toni Danzig Coastal Watershed Council	Greg Gauthier Executive Director Coastal Watershed Council
Marco Gonzalez Surfrider Foundation	Teresa (Teri) M. Olle CALPIRG Toxics Program Director and Staff Attorney
Leslie Mintz Heal The Bay	Shelley Luce Heal the Bay

MEMBER	ALTERNATE
Bruce Reznik San Diego Baykeeper	Stephanie Pacey San Diego Baykeeper
Lynn Barris Butte Environmental Council	Leah Wills PlumasCorp
Barbara Vlamis Butte Environmental Council	Allen Harthorn Friends of Butte Creek
Alan Levine Coast Action Group	John Robinson Heal the Ocean
David Beckman Natural Resources Defense Council	Steve Fleischli Santa Monica BayKeeper
Conner Everts Southern California Watershed Alliance	Suzanne Michel Southern California Watershed Alliance

Appendix F

Existing Stakeholders/Advisory Groups for Impaired Waters within California

**Existing Stakeholders/Advisory Groups for Impaired Waters
within California**

North Coast RWQCB (Region 1)

Water Body	Stakeholders
GARCIA RIVER	Cal Trout California Farm Bureau Federation California Forestry Association Coast Action Group Friends of the Garcia Garcia River Watershed Agricultural Landowners Group Georgia-Pacific Corporation Mailliard Ranch Mendocino County Water Agency Mendocino Redwoods Company North Greenwood Community Association Guido Pronsolino Stornetta Family
GUALALA RIVER	Foppiono Family Gualala Redwoods, Inc. Gualala River Watershed Council David Luers Mendocino Redwoods Company Pioneer Resources Richardson Family
MATTOLE RIVER	Mattole Restoration Council Mattoloe Salmon Group Pacific Lumber Company Sanctuary Forest
NAVARRO RIVER	Anderson Valley Farm Group California Farm Bureau Federation Friends of the Navarro Navarro Watershed Protection Association Mendocino Redwoods Company Mendocino County Water Agency Maillaird Ranch Guido Pronsolino Mendocino Wine Growers Alliance Sierra Club

San Francisco Bay RWQCB (Region 2)

Water Body –Pollutant	Advisory Committee/Stakeholder Group
BAY – mercury	SF Bay Mercury Council
GUADALUPE RIVER WATERSHED – mercury	Guadalupe River TMDL workgroup of the Watershed Assessment Subgroup of the Santa Clara Basin Watershed Management Initiative
URBAN CREEKS – diazinon	Urban Pesticide Committee
SAN FRANCISCO BAY – PCBs	PCB TMDL Stakeholder Group (includes members from industry, military, municipalities, environmental organizations, and academia)
SAN FRANCISCO BAY SOUTH OF DUMBARTON BRIDGE – copper and nickel	Santa Clara Basin Watershed Management Initiative (Bay monitoring and modeling subgroup)
SAN FRANCISCO BAY NORTH OF DUMBARTON BRIDGE – copper and nickel	Steering Committee for Copper and Nickel TMDL project north of the Dumbarton Bridge
TOMALES BAY AND TRIBUTARIES– nutrients, pathogens, mercury, sediment	<p>Tomaes Bay Agriculture Group Government Agencies (National Park Service, National Marine Sanctuary, Department of Health Services, County of Marin, RCDs, U.C. Cooperative Extension, Tomales Bay State Park, CDFG)</p> <p>Private Industry (Oyster Company, Dairymen Assoc., Chamber of Commerce)</p> <p>Tomaes Bay Shellfish Technical Advisory Committee</p> <p>Tomaes Bay Watershed Council (includes business, environmental, government, rancher, homeowner and landowner representatives from the watershed)</p> <p>County of Marin Septic Technical Advisory Committee (represents entire county not just Tomales Bay)</p>
NAPA RIVER WATERSHED – sediment and related	Napa River Watershed Task Force Oversight Advisory Committee
PESCADERO CREEK WATERSHED– sediment	San Mateo County RCD Board of Directors

Water Body –Pollutant	Advisory Committee/Stakeholder Group
SF BAY REGIONWIDE – sediment	Fishnet 4C
SONOMA CREEK – sediment	Sonoma Creek Conservancy
SAN FRANCISQUITO CREEK - sediment	San Francisquito Creek Joint Powers Authority
PETALUMA RIVER - sediment	City of Petaluma, Sonoma County, Sonoma County Water Agency, Southern Sonoma County Resource Conservation District, Petaluma River Authority

Central Coast RWQCB (Region 3)

Water Body	Existing Interested Group
PAJARO RIVER / LLAGAS CREEK	Pajaro River Watershed Council Central Coast Resource Conservation and Development Santa Clara County Streams for Tomorrow Coastal Watershed Council Association of Monterey Bay Area Governments Coalition of Central Coast County Farm Bureaus Pajaro River Nutrient and Siltation TMDL Advisory Committee
CHORRO CREEK, LOS OSOS CREEK, MORRO BAY ESTUARY	Morro Bay National Estuary Program Williams Shellfish Oyster growers Farm Bureau California Men's Colony Los Osos Community Services Board
SAN LORENZO RIVER	County of Santa Cruz, Health Services Agency San Lorenzo Technical Advisory Committee (sediment)
WATSONVILLE SLOUGH	Coastal Watershed Council County of Santa Cruz – Planning Department Resource Conservation Districts of Santa Cruz and Monterey Counties Natural Resources Conservation Service- Watsonville Slough Project
SAN LUIS OBISPO CREEK	Land Conservancy of San Luis Obispo City of San Luis Obispo Coastal San Luis Resource Conservation District ECOSLO Farm Bureau of San Luis Obispo County California Polytechnic State University

Los Angeles RWQCB (Region 4)

Water Body	Stakeholders/Advisory Groups
SANTA MONICA BAY	Santa Monica Bay Restoration Project Santa Monica Bay Watershed Council Heal the Bay Santa Monica BayKeeper Southern California Coastal Water Research Project Natural Resources Defense Council Surfrider Foundation City of Los Angeles Los Angeles County, Dept. of Public Works Sanitation Districts of Los Angeles County
SANTA CLARA RIVER-chloride and nutrients	Sanitation Districts of Los Angeles County Newhall Ranch Friends of the Santa Clara River Santa Clara River Watershed Advisory Group Santa Clara River Watershed Management Plan Santa Clara Estuary Advisory Group Endangered Species Work Group One Valley, One Vision
CALLEGUAS CREEK-chloride	Calleguas Creek Watershed Management Group Los Posas Users Group Conejo Users Group
LOS ANGELES RIVER	Los Angeles and San Gabriel Rivers Watershed Council City of Los Angeles Los Angeles County Department of Public Works Sanitation Districts of Los Angeles County Heal the Bay Santa Monica Bay Restoration Project Southern California Coastal Water Research Project
MALIBU CREEK AND LAGOON	Malibu Creek Watershed Advisory Council
DOMINGUEZ CHANNEL	Dominguez Channel Watershed Advisory Council (includes Cities of Long Beach, Torrance, Hawthorne, the Port of Los Angeles, Port of Long Beach, Exxon-Mobil, and the Audubon Society)

Central Valley RWQCB (Region 5)

Water Body- TMDL	Advisory Committee
SAN JOAQUIN RIVER- salt and boron	San Joaquin River Tributary Group Grassland Area Farmers
SAN JOAQUIN RIVER- organophosphate pesticides	San Joaquin River Tributary Group San Joaquin River Ag Implementation Group
SAN JOAQUIN RIVER- selenium	San Joaquin River Tributary Group Grassland Area Farmers
SAN JOAQUIN RIVER/ SOUTH DELTA- dissolved oxygen	San Joaquin River Tributary Group San Joaquin River Dissolved Oxygen TMDL Steering Committee
ALL MERCURY TMDLS	Delta Tributaries Mercury Council (including CalFed, Larry Walker Associates, Sacramento County Regional Sanitation District, Department of Conservation, UC Davis, CVRWQCB, SWRCB, USEPA, Homestake Mining, Meridian Institute, Harris and Company, Yolo County, Yolo County RCD, CDFG, DWR, Rumsey IC) Sierran Abandoned Mine Lands Technical Group (including USDA/USFS, USBLM, CSUS, Nevada County Environmental Health, California State Parks, SYRCL, USGS, USEPA, Department of Conservation, UC Davis, CVRWQCB, SWRCB)
SACRAMENTO RIVER- diazinon	Agricultural Council of California Almond Board Apricot Producers of California Butte County Department of Agriculture CalFED Bay-Delta Program California Agricultural Production Consultants Association California Cherry Advisory Board California Department of Fish and Game California Department of Food and Agriculture California Dried Plum Board/ Agriculture Research Consulting California Farm Bureau Federation California Grape and Tree Fruit Agreement

Water Body- TMDL	Advisory Committee
	<p> California Minor Crops Council California State University, Chico, Department of GeoSciences California Tree Fruit Agreement Central Valley RWQCB CERUS Consulting Cling Peach Association Coalition For Urban/Rural Environmental Stewardship Community Alliance with Family Farmers Compliance Services International Deltakeeper Department of Pesticide Regulation Dow AgroSciences G. Fred Lee & Associates Glenn County Department of Agriculture John Taylor Fertilizers Co. Kahl / Pownall Makhteshim-Agan North America Pesticide Action Network Prune Bargaining Association Russick Environmental Consulting S & J Ranch Sacramento County Stormwater Sacramento Regional County Sanitation District Sacramento River Watershed Program/ SRWP Resource Center </p>
SACRAMENTO RIVER-diazinon	<p> Sutter County Agriculture The Nature Conservancy University of California, Cooperative Extension University of California, Integrated Pest Management Project University of California, Sustainable Agriculture Research and Education Program University of Maryland (representing Syngenta Crop Protection) University of North Texas U.S. Department of Agriculture, Natural Resources Conservation Service U.S. Environmental Protection Agency U.S. Geological Survey Water Quality Consultant Western Crop Protection Association (now the California Plant Health Association) </p>

Lahontan RWQCB (Region 6)

Water Body	Advisory Committee
BIG SPRINGS	Long Valley Hydrologic Advisory Committee
CROWLEY LAKE	Long Valley Hydrologic Advisory Committee
GRANT LAKE	Mono County Collaborative Planning Team Mono Lake Committee
HEAVENLY VALLEY CREEK	Upper Truckee River Focused Watershed Group Heavenly Ski Resort Master Plan Technical Advisory Group
HOT CREEK (2)	Long Valley Hydrologic Advisory Committee
INDIAN CREEK RESERVOIR	Carson River Subconservancy District Upper Carson CRMP Friends of Hope Valley
LAKE TAHOE	Upper Truckee River Focused Watershed Group EIP Integration Team Scientific Collaboration Team Tahoe GIS/Information Mgt Team Forest Health Consensus Group Prescribed Burn TAC Water Quality Working Group Lake Tahoe Environmental Education Coalition Lake Tahoe Water Quality Coalition Tahoe Citizens Environmental Action Network Motorized Watercraft Technical Advisory Group Lake Tahoe Interagency Monitoring Program Tahoe Basin Interagency Road Maintenance and Operations Committee Subcommittees: Tahoe Interagency Runoff Sub-Committee Winter Maintenance and Operations Shorezone Review Committee Shorezone Concensus Group (EIS issues) Floodplain Delineation Group Lake Tahoe Coordinating Group (CA agencies)

Water Body	Advisory Committee
LEE VINING CREEK	Mono County Collaborative Planning Team Mono Lake Committee
LITTLE ALKALI LAKE	Long Valley Hydrologic Advisory Committee
LITTLE HOT CREEK	Long Valley Hydrologic Advisory Committee
MAMMOTH CREEK	Long Valley Hydrologic Advisory Committee
MILL CREEK (1)	Mono County Collaborative Planning Team Mono Lake Committee
MONO LAKE	Mono County Collaborative Planning Team Mono Lake Committee
PINE CREEK	Pine Creek CRMP
SQUAW VALLEY CREEK	Squaw Valley Municipal Advisory Council Truckee River Watershed Council
SUSAN RIVER	Piute Creek Planning Group
TRUCKEE RIVER	Truckee River Watershed Council Truckee River Habitat Restoration Group Truckee River Basin Water Group Truckee River Aquatic Monitoring Group Truckee River Watershed Assessment Technical Advisory Committee
TWIN LAKES	Long Valley Hydrologic Advisory Committee

Colorado River Basin RWQCB (Region 7)

Water Body	Advisory Committee
ALAMO RIVER	Technical Advisory Committee TMDL Alamo River Sedimentation
NEW RIVER	Technical Advisory Committee TMDL New River Sedimentation
NEW RIVER	Border Advisory Committee
SALTON SEA DRAINAGES	Technical Advisory Committee TMDL Salton Sea Drainages Sedimentation
SALTON SEA	Salton Sea Authority & Science Subcommittee

Santa Ana RWQCB (Region 8)

Water Body	Advisory Committee
NEWPORT BAY	Newport Bay Management Committee Newport Bay Executive Committee
BIG BEAR LAKE	Big Bear lake TMDL Workgroup
LAKE ELSINORE/ CANYON LAKE	Lake Elsinore/Canyon Lake Workgroup Lake Elsinore and San Jacinto Watershed Project Authority
CHINO BASIN	Chino Basin TMDL Workgroup

San Diego RWQCB (Region 9)

Water Body	Stakeholders
SAN DIEGO BAY NEAR CHOLLAS CREEK	City of San Diego Port of San Diego U.S. Navy/ SPAWAR Southern California Coastal Water Research Project Environmental Health Coalition Baykeeper MEC Analytical Services
SAN DIEGO BAY- SEVENTH STREET CHANNEL	City of San Diego Port of San Diego U.S. Navy/SPAWAR Southern California Coastal Water Research Project Environmental Health Coalition Baykeeper MEC Analytical Services
CHOLLAS CREEK - diazinon	City of San Diego Integrated Pest Management Education University of California, Davis/Integrated Pest Management U.C. Statewide IPM Project/ San Diego Southern California Coastal Water Research Project Department of Pesticide Regulation
CHOLLAS CREEK - metals	City of San Diego Port of San Diego Caltrans Southern California Coastal Water Research Project U.S. Navy AMEC (Ogden) URS Grenier Environmental Health Coalition
RAINBOW CREEK – nutrients	Camp Pendleton Marine Corps Base, Office of Water Resources Fallbrook Public Utility District Watermaster, Santa Margarita River County of San Diego- Dept. of Environmental Health, Dept. of Public Works, Dept. of Planning and Land Use Hines Nurseries, Fallbrook, CA San Diego State University, Santa Margarita Ecological Reserve U.C. Cooperative Extension, San Diego County

Water Body	Stakeholders
	<p>CA Dept of Transportation, District 11 Mission Resource Conservation District Santa Margarita River Watershed Monitoring Group (includes additional stakeholders: County of Riverside, Rancho California Water District, Eastern Water District) Benton and Joanne Price U.S. EPA, Region 9 U.S. Army Corps of Engineers U.S. Fish and Wildlife Service CA Dept of Fish and Game Elsinore-Murieta-Anza Resource Conservation District Natural Resource Conservation Service Rainbow Municipal Water District Rainbow Conservation Camp Oak Crest Estates Rainbow Protea Corp. Choi Greenhouse Rainbow Valley Azalea Growers Rainbow Farms Protea Farms of California Macadamia Nut Grower Carlsbad Floral Exchange Hesketh Growers Golden Nursery Andre Nursery Golden Earth Nursery Yamane Greenhouses, Inc. Rainbow Specimen Trees</p>
SHELTER ISLAND YACHT BASIN	<p>Port of San Diego U.S. Navy/SPAWAR Port Tenant's Association Environmental Health Coalition Southern California Coastal Water Research Project University of California Cooperative Extension/ Seagr</p>
MISSION BAY – coliform	<p>City of San Diego Southern California Coastal Water Research Project Sea World Scripps Institute of Oceanography County of San Diego, Department of Environmental Health Heal the Bay</p>